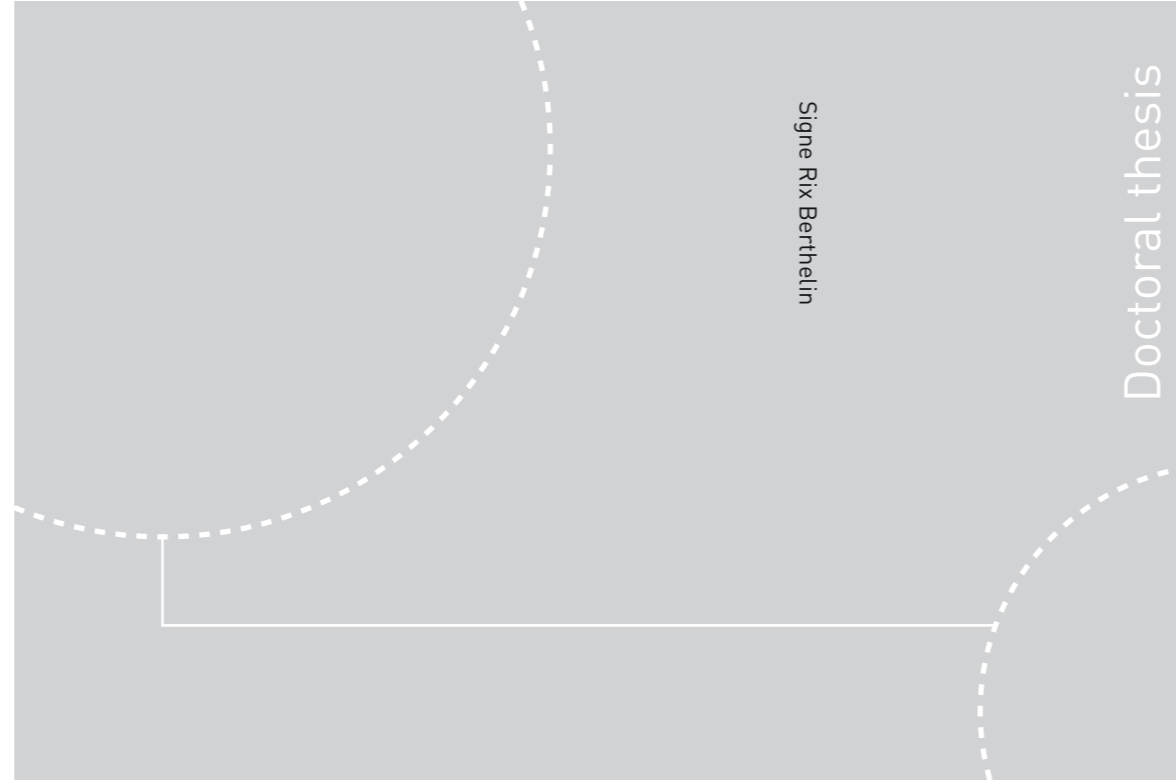


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Signe Rix Berthelin

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For my grandmothers:

Tove Carstensen and Inger Margrethe Rix

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List of abbreviations

1	first person	INTR	intransitive
2	second person	LOC	locative
3	third person	MASC	masculine
ABL	ablative	MOD	modalis
ABS	absolutive	MODL	modal
AUX	auxiliary	NEG	negation
CAUS	causative	OBJ	object
COND	conditional	OPT	optative
CONJ	conjunctive	PART	participial mood
CONT	contemporative	PAST	past
DAT	dative	PERF	perfect
DEF	definite	PL	plural
DEM	demonstrative	POS	possessive
DU	dual	PRON	pronoun
DUR	durative	PROX	proximate
EPIST	epistemic	REL	relative
EVID	evidence	REP	reported
EXCL	exclamation	SG	singular
EXT	extended	SIM	similaris
FEM	feminine	SUBJ	subject
FOC	focus	TERM	terminalis
FUT	future	VBLZ	verbalizer
IMP	imperative	VIA	vialis
IND	indicative	VIS	visual
INDEF	indefinite	YSTR	yesterday past
INT	interrogative		

Chapter 1:

Introduction

1.1 Setting the scene

The linguistics literature has paid significant attention to modal expressions in European languages, especially Germanic languages like German and English. In the recent decade, in-depth studies of modal expressions in non-Indo-European languages (see e.g. Peterson, 2010; Deal, 2011; Matthewson, 2013) have contributed significantly to the general understanding of modal meaning and challenged and expanded existing frameworks that were developed on the basis of the linguistic realities in European languages. The present thesis contributes to the growing understanding of modal expressions in the languages of the world by analysing and accounting for the semantic and pragmatic properties of four modal expressions in Uummarmiutun, namely *řukřau* ‘must, has to’, *hungnaq* ‘probably’, *huk* ‘want’ and *lla* ‘to be able to/can’ (see Lowe, 1984).^{1,2} The analysis is developed within relevance theory (Sperber and Wilson, 1986/1995; Carston, 2002) with insights from Cognitive Functional Linguistics (Boye, 2005, 2012a) and hence it is one of the first applications of relevance theory on modal expressions in a non-Indo-European language.

Uummarmiutun is an endangered Inuktit dialect spoken in the Inuvialuit Settlement Region in the Canadian Northwest Territories. Like other Inuktit dialects in the Northwest Territories, Uummarmiutun has received little attention in the academic linguistics literature. Thus, the present thesis and the research performed in connection with it contribute to the documentation and

¹ Throughout the thesis, linguistic expressions are written in italics, and the material in ‘’ is a gloss.

² Note that in the Uummarmiutun dictionary (Lowe, 1984), *hungnaq* is spelled *huknaq* and *lla* is spelled *lla*. The orthographic representations *hungnaq* and *lla* are used throughout the thesis in accordance with the pronunciation and the preferences of the speakers of Uummarmiutun consulted for the present study.

description of a vulnerable and under-described dialect. The study is based on knowledge shared by speakers of Uummarmiutun,³ and the thesis includes presentations and detailed analyses of these data as well as an outline and discussion of the elicitation techniques we employed. The thesis thereby contributes to the young but growing literature on semantic fieldwork methods (Matthewson, 2004; Burton and Matthewson, 2015). Due to its abstract nature, modal meaning is particularly challenging in semantic fieldwork; hopefully, the explication of the methodological considerations and application can be of use to other linguists and community based Language Specialists in their study of abstract meanings in other languages.

Indo-European modals in general tend to restrict modal force (traditionally labelled ‘possibility’ and ‘necessity’) lexically, while the modal type (‘root’ and ‘epistemic’) is determined by the context. English *must* and *may* will serve as examples:

- (1.1) a. Ann must be in court.
b. Mary may leave tomorrow. (Groefsema, 1995: 53)

Depending on the context, the sentence with *must* in (1.1a) can mean that the speaker is almost certain that Ann is in court (epistemic necessity) or that Ann is obliged to be in court (‘root necessity’ or ‘deontic necessity’). The modal strength expressed by *must*, i.e. ‘necessity’, however remains the same on both interpretations. Also, the modal strength of *may*, i.e. ‘possibility’, remains the same, while the modal type meaning depends on the context; the sentence in (1.1b) can mean that the speaker is neither certain nor uncertain that Mary will leave tomorrow (epistemic possibility), or it can mean that Mary is permitted (but not obliged) to leave tomorrow (‘root possibility’ or ‘deontic possibility’). *Must* and *may* are cases of ‘root-epistemic overlap’ because it depends on the context whether they are used to express root or epistemic modal meaning.

This pattern, where modal type is a result of pragmatics and modal force is semantically restricted, is typical for Indo-European modals (e.g. van der Auwera and Ammann, 2013). Other languages have modal expressions which restrict modal type lexically, as well as modal expressions which are not appropriately described as lexically restricted to one of the modal forces traditionally labelled as ‘possibility’ or ‘necessity’. Non-overlapping modals are especially common in

³ The knowledge about Uummarmiutun presented in this thesis was shared by Panigavluk, Mangilaluk and the late Kavakluk. The thesis also contains knowledge shared by Mimirlina, Agnagullak and Suvvatchiaq (see §4.3.1).

languages in Papua New Guinea and in the Americas (*ibid.*). As we shall see, also Uumarmiutun has non-overlapping modals. Since most frameworks used to account for the semantic and pragmatic properties of modal expressions are based on languages where a high degree of root-epistemic overlap is present, it is possible that the application of existing frameworks on Uumarmiutun modals may require some adjustments.

The growing literature on modal expressions in non-Indo-European languages tend to perform their analyses within formal semantics and Gricean pragmatics (e.g. Peterson, 2010; Deal, 2011; Matthewson, 2013). The present thesis aims at a cognitively plausible analysis of modals, which observes a clear distinction between the semantic and pragmatic properties of the individual expressions. In accordance with this aim, the account is phrased within the relevance-theoretic framework (see Sperber and Wilson, 1986/1995). Relevance theory is a theory of linguistic communication. It explains how utterances are interpreted and how semantic (encoded) meaning interacts with pragmatic principles to derive the meaning intended by the speaker. The thesis builds on Papafragou's (2000) relevance-theoretic account of the semantics and pragmatics of modal expressions. Papafragou's (2000) model is developed on the basis of the linguistic realities of English modal auxiliaries, but it looks promising with respect to cross-linguistic applicability. The present application of Papafragou's (2000) framework on Uumarmiutun data is therefore expected to increase the cross-linguistic applicability of Papafragou's (2000) original framework in addition to capturing the linguistic realities of Uumarmiutun modals.

During the process of revising Papafragou's (2000) framework to make it fit the linguistic realities of Uumarmiutun, some attention will be paid to modals in other languages, mainly English and German. The reason for this is twofold. Modal expressions in Germanic languages are well described, and hence they serve well as illustrations. The other reason has to do with the intention to ensure that the revised framework is suitable for cross-linguistic description and comparison. While Uumarmiutun modals do not display lexical root-epistemic overlap, modals in other languages of the world do. The framework must therefore be capable of analyzing the semantics and pragmatics of root-epistemic overlapping modals as well as non-overlapping modals, and hence some attention to root-epistemic overlap is necessary. The thesis is, to my knowledge, the first comprehensive relevance-theoretic account of modal expressions in a non-Indo-European language.

A good account of any linguistic phenomenon presupposes a solid definition of that phenomenon. The term ‘modality’ has been applied to a variety of phenomena in the linguistics literature (see Boye, 2012b, for an overview), and hence there is a particularly strong need for a clear definition of modal meaning in the present study. A rigid and precise definition of modality is moreover crucial in order to a) recognize whether a given Uummarmiutun expression has the necessary properties for being categorized as a modal and b) determine whether a given expression should be included in the present study and used to inform the adjustments of a model for modal semantics and pragmatics. I shall discuss various definitions of modality from the formal and cognitive literature and argue that Boye’s (2005) definition of modality is best suited for present purpose. Boye’s (ibid.) definition allows us to recognize modal meaning when we see it and thereby to be clear on which types of meanings the revised model should be demanded to capture. As for the extension of the category of modality, it is particularly interesting to note that the relationship between epistemic modality (e.g. the ‘certainty’ interpretations of (1.1a-b) above) and evidentiality (i.e. linguistic indication of the type of evidence the speaker has for the proposition) is contested throughout the linguistics literature. Therefore, since the thesis proposes a model for analyzing modal semantics and pragmatics, a natural follow-up question is whether and how it offers any insights or problems with respect to the relationship between evidentiality and epistemic modality.

1.2 Expressions under investigation

The main goal of this thesis is to provide descriptions and analyses of the semantics and pragmatics of Uummarmiutun modal expressions. More specifically, the aim is to investigate for twelve Uummarmiutun expressions whether these are modal or not, and if so, of which type. Furthermore, the thesis aims to propose precise lexical semantic and pragmatic accounts for four of these expressions, which turn out to be particularly interesting to the understanding of modal meaning.

The four Uummarmiutun expressions in focus are *ruk̄rau* ‘must, has to’, *hungnaq* ‘probably’, *huk* ‘want’ and *lla* ‘to be able to, can’ (see Lowe, 1984). These four expressions belong

to the part of speech category called ‘postbases’ within the Inuktitut linguistics literature.⁴ Being postbases, they are optional affixes occurring between the base and the inflection in the Inuktitut word:

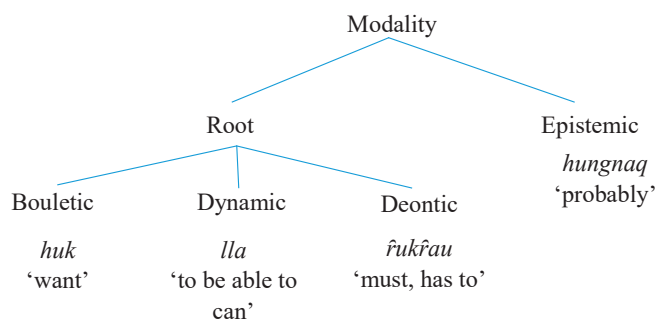
Figure 1.1: *The Inuktitut word*

base + (any number of postbases) + ending + any number of enclitics
stem

(Nagai, 2006: 35)

The four expressions in focus of the study provide a good basis for testing and expanding the applicability of a framework intended to capture the semantics and pragmatics of modal expressions. Judging from the entries provided in the Uummarmiutun dictionary (Lowe, 1984), they seem to each represent one of the traditional modal meaning categories:

Figure 1.2: *Uummarmiutun modals and traditional labels for modal meanings*⁵



The investigations of the respective modals are guided by hypotheses derived from the descriptions of similar modals in other languages. Modals with root-epistemic overlap occur cross-linguistically and they seem to have developed their epistemic meanings later than their root meanings (see Bybee, Perkins and Pagliuca, 1994). *Lla* and *huk* should therefore be checked for epistemic meanings, even though their entries in Lowe’s (1984) dictionary suggest that they are

⁴ Other linguists use the term ‘suffix’ (Lowe, 1984, 1985a) or ‘affix’ (e.g. Fortescue, 1985) rather than ‘postbase’. I shall use the term ‘postbase’ like e.g. MacLean (2014) and Briggs, Johns and Cook (2015) for the sake of clarity; the terms ‘suffix’ and ‘affix’ could be understood in a broader sense which includes enclitics in addition to postbases.

⁵ The terms bouletic, dynamic, deontic and epistemic are from Greek, and they have a long tradition in the studies of modality in linguistics and philosophy (see Lyons, 1977; Eide, 2005). Their meanings are explained in greater detail in Chapter 3, §3.1.2.

restricted to root meanings. There is a particular strong need to check if *řukřau* covers epistemic as well as root modal meaning, due to the presence of *must* in the dictionary entry for *řukřau* (Lowe, 1984). If one of the expressions cover epistemic meaning, the next question is whether the epistemic uses are part of the semantics of the given expression. In other words, the question will be which meanings are encoded and which pragmatic processes are involved in deriving context-specific interpretations. As for *huk*, it is moreover interesting to note that in other Inuktit dialects, expressions whose meaning is traditionally described as ‘want’ turn out to not be restricted to desirability (Johns, 1999). The data on *huk* is therefore collected and analyzed with the goal in mind of determining which other interpretations are available for utterances with *huk*, and to determine which of these meanings are part of the semantics of *huk*. As an epistemic modal, *hungnaq* needs to be tested for evidential properties, since some epistemic modals in other languages encode evidential restrictions in addition to their modal meaning (see Boye, 2012a). Moreover, some scholars even argue that epistemic modals are inherently evidential (von Stechow and Gillies, 2010). The data on *hungnaq* is therefore collected and analyzed with the goal in mind of determining if *hungnaq* is modal, evidential or both.

In addition to the in-depth account of *řukřau*, *hungnaq*, *huk* and *lla*, the thesis presents data and analyses of eight other Uummarmiutun expressions which – judging from Lowe’s (1984) dictionary entries – might have modal meaning. The investigation of those additional expressions is intended to test the ability of Boye’s (2005) definition of modality to identify linguistic modal expressions, and to contribute to the description of Uummarmiutun with a collection of refined descriptions of modal expressions in the language. Two of them, i.e. *niq* ‘apparently’ and *guuq* ‘hearsay’, seem to have evidential meaning. The data and analyses of *niq* and *guuq* will therefore be used to see if the proposed model for capturing modal semantics and pragmatics can be extended to evidential expressions and reflect similarities and differences between various types of epistemic expressions.

1.3 Dissemination of results

The knowledge collected about the Uummarmiutun postbases form the basis for the semantic and pragmatic accounts in the present thesis. Moreover, following Inuvialuit Elder Panigavluk’s idea,

some of the findings pertaining to the respective expressions have been used to make teaching materials in the shape of ‘suffix circles’. Some of the data have the shape of sentences containing modals paired with scenarios where they can be appropriately uttered. Scenarios tend to be richer than mere translations and therefore particularly useful for teaching purposes. The scenarios were therefore used in suffix circles to exemplify the meanings a given modal could be used to express. The suffix circles are available on www.uqauhiq.wix.com/inuvialuktun.

During our meetings, Panigavluk, Mangilaluk and Mimirlina shared stories and knowledge in Uummarmiutun and Siglitun, which we translated and annotated together. These are also available on the website along with grammar explanations meant for anyone who is interested in the Uummarmiutun language.

1.4 Outline of the thesis

The chapter immediately following the introduction, Chapter 2, provides an overview of Inuktut grammar with emphasis on Uummarmiutun and a note on the current situation of the language. Some of the research questions, analyses and predictions in the thesis are informed by descriptions and observations from other Inuktut dialects as well as Inuktut in general. Chapter 2 therefore includes an overview of the linguistic affiliations between Uummarmiutun and other Inuktut dialects as well as some of the properties shared across the Inuktut dialect continuum.

Chapter 3 is concerned with defining modality and the character of a modal expression. Throughout the linguistics literature, ‘modality’ is understood as ‘subjectivity’ as in speaker involvement (Palmer, 1986), ‘undetermined factuality’ (Narrog, 2005, 2009) and ‘necessity and possibility’ (e.g. Lyons, 1977; van der Auwera and Plungian, 1998; von Stechow, 2006). In the formal semantics literature, there is a tradition of understanding modals as those expressions which quantify existentially or universally over possible worlds (e.g. Kratzer, 1981, 2012, Hacquard, 2011). After a review of the suitability of these various conceptions of modality I shall, following Boye (2005), argue that modal meaning is appropriately defined as ‘unrealized force-dynamic potential’. This definition clearly reflects the properties of linguistic modal meanings, and it comes with a terminology that facilitates the identification of the various modal concepts figuring in interpretations of utterances containing modal expressions.

Chapter 4 presents and discusses the methodology employed in the process of collecting data. The chapter points out challenges in semantic fieldwork before providing a thorough outline of the techniques used for collecting knowledge about the meaning of the Uummarmiutun expressions in focus of the present study. The chapter also includes a presentation of the consultants who have worked on the project.

Chapter 5 contains systematized analyses of the collected data. In the first part of the chapter, the definition of modal meaning as unrealized force-dynamic potential is used to determine for eight Uummarmiutun expressions whether they are modal or not. The second part of the chapter provides in-depth analyses of the four modals in focus of the study, namely *řukřau*, *hungnaq*, *huk* and *lla*. As the reader will note, the data points are quotes from the interviews conducted with the language consultants. Presenting the data in this way increases transparency and hence the validity of the present account because it renders the knowledge as it was shared by speakers of the language.

Chapter 6 is concerned with questions pertaining to how modal meaning is represented in the mental lexicon. The goal of the chapter is to propose a model which is suitable for capturing the semantics and pragmatics of modals in Uummarmiutun and beyond. The chapter first presents the basic principles and analytic tools of relevance theory. Afterwards, Papafragou's (2000) original account of modality is outlined and then reviewed and revised. The chapter concludes by proposing a template intended to be suitable for capturing the semantics of modal expressions cross-linguistically.

Chapter 7 contains the semantic and pragmatic accounts of the four Uummarmiutun modals *řukřau*, *hungnaq*, *huk* and *lla*. The chapter employs the revised model to propose a lexical semantics for each expression along with accounts of how the semantic proposals interact with pragmatic principles to yield the various interpretations observed in the data set.

Before Chapter 9 sums up the thesis, Chapter 8 sketches how the proposed model can be used to account for the semantics and pragmatics of linguistic expressions that encode various types of epistemic meaning, especially evidentials.

Chapter 2:

Linguistic affiliations and overview of Inuktut grammar

2.1 Introduction

Uumarmiutun is part of the Inuktut dialect continuum,⁶ which spreads from the Little Diomedede Island off the coast in Alaska in the west, across the arctic Canada to Kalaallit Nunaat (Greenland) in the east, as illustrated in Map 2.1:

Map 2.1: Inuit Region⁷



© Pirurvik Centre (2017)⁸

⁶ This dialect continuum is also referred to as Inuit in the literature. Inuit is however also the name of the people. In accordance with the Inuit Tapiriit Kanatami (the national organization concerned with Inuit rights and interests in Canada), I use the name Inuktut to refer to the language of the Inuit people (see Inuit Tapiriit Kanatami, 2017).

⁷ The Labrador area variety is usually spelled 'Inuttut' rather than 'Inutut'.

⁸ The indications of Yupik and Aleut are added by me, as is the markup of the locations of ISR and the communities of Inuvik and Aklavik.

Inuktut belongs to the ‘Eskimo’-branch⁹ of the ‘Eskimo-Aleut’ language family together with Yupik (see e.g. Dorais, 2010). Yupik is marked with blue in Map 2.1. Aleut, the other branch of the Eskimo-Aleut family, is marked with red. Uummarmiutun is spoken in the communities of Inuvik and Aklavik in the Inuvialuit Settlement Region in Canada. Inuvik and Aklavik are also home to the Gwich’in, who speak an Athabascan language. The locations of Aklavik and Inuvik are marked with the purple circle in Map 2.1, and the Inuvialuit Settlement Region is marked with orange. Other Inuktut dialects spoken in the Inuvialuit Settlement Region are Siglitun and Kangiryuarmiutun. The three dialects Siglitun, Kangiryuarmiutun and Uummarmiutun are collectively referred to as Inuvialuktun. The suffix *-tun* is a similis case suffix meaning ‘like’ or ‘as’. Uummarmiutun is very closely related to Alaskan Iñupiaq, and sometimes the preferred name for Uummarmiutun is Inupiatun. The Inuvialuit Cultural Resource Centre generally uses the name Uummarmiutun in their publications, and I shall do the same throughout the thesis.

Inuktut comprises of a great number of dialects and sub-dialects, and groupings of sub-dialects may be done based on linguistic affinity as well as political realities. The relation of Uummarmiutun to other Inuktut dialects is explained in §2.3. Though each dialect has its own characteristics and some speakers report difficulty in understanding certain dialects, there is no doubt among speakers and linguists alike that the Inuktut dialects are closely related (see e.g. Fortescue, 1985) and that they ‘share a common core’ (Dorais, 2010).¹⁰ The main characteristics of Inuktut language structure are outlined in §2.4 with special emphasis on the aspects of Uummarmiutun grammar relevant to the present study. The existing linguistic descriptions of Uummarmiutun are limited to a grammar (Lowe, 1985a), a dictionary (Lowe, 1984) and Lowe’s (1991) PhD thesis. In the present outline of Inuktut grammar, examples and insights are also taken from MacLean’s (1986a, 2014) detailed descriptions of North Slope Iñupiaq, which is very closely related to Uummarmiutun. §2.5 summarizes the properties of Inuktut grammar which have special relevance to the study of modals. Before we begin, a note on the current situation and context of Uummarmiutun is in order. This is provided in §2.2.

⁹ The term ‘Eskimo’ is not a term of this language family. It is sometimes used as an English term in Alaska to refer collectively to all Inuit and Yupik people of the world (see Kaplan, 2011). In accordance with the Inuit Circumpolar Council’s resolution from 2010 (see Johns, 2014), I shall use the name Inuit to refer to Inuit people. The term ‘Eskimo’ will be used only to refer to the language-branch constituted by the Yupik and Inuktut languages (see Figure 2.1 below).

¹⁰ Varieties of Inuktut are generally classified as dialects (see e.g. Alaska Native Language Center, n.d.-a; Dorais, 2010: 27). However, a systematic study of the possible motivations for these classifications is needed.

2.2 A brief introduction to the Uummarmiutun language situation

Dialects of Inuktut are spoken across three political regions. Speakers number 47,000 in Greenland, 24,500 in Canada and 2,144 in Alaska (Krauss, 2007). The western Inuktut dialects are generally more endangered than the eastern dialects. Kalaallisut, for instance, is spoken fluently by people of all ages, and it is used as an everyday language, as a medium of education and in public administration in Greenland. This does, however, *not* mean that the Danish colonization of Greenland did not have an impact on the linguistic situation in Greenland.¹¹ In Alaska and western Canada, most fluent Inuktut speakers are of mature age, and speakers and learners alike express concern for their language's future. According to surveys conducted in 2004-2007, there were at that time 694 individuals in the Northwest Territories who reported that they were able to converse fluently in Inuvialuktun (Oehler, 2012: 6-7); 196 of these spoke Kangiryuarmiutun, and the remaining 498 speakers were divided between Siglitun and Uummarmiutun. As Oehler (*ibid.*) notes, the number of speakers have declined since the time of the survey. The main causes for this situation are the residential school era, discrimination and subsequent underfunding of language revitalization and language education. To learn about the abusive systems and actions throughout the residential school era in Canada, the reader may visit the Truth and Reconciliation Commission's website at www.trc.ca. For information pertaining specifically to the Inuvialuit, the reader is referred to the book *Taimani* (Arnold et al. 2011) published by the Inuvialuit Regional Corporation. *Taimani*, which means 'At that time', moreover offers a timeline of Inuvialuit history from 'time immemorial' to present day.

Inuvialuit have a strong connection to their language (see e.g. Panigavluk, 2015; Oehler, 2012), and many efforts are being taken to increase the knowledge and use of the language. The Inuvialuit Cultural Resource Centre, which is part of the Inuvialuit Regional Corporation, works continuously on revitalizing Inuvialuktun. Among their many efforts are publications such as children's books and the yearly calendar printed in all three dialects, as well as terminology workshops where Elders gather to find appropriate Inuvialuktun terms for things like hard drive and computer file. The school in Inuvik has an Inuvialuktun immersion Kindergarten programme

¹¹ The reader is encouraged to follow the work conducted by Saammaateqatigiinnissamut Isumalioqatigiissitaq, the Reconciliation Commission in Greenland (see Saammaateqatigiinnissamut Isumalioqatigiissitaq, n.d.).

in Uummarmiutun, and Inuvialuktun classes are offered to all kids at school. People of the younger generations tend to know a large number of Inuvialuktun expressions, and they regularly refer to their relatives using Inuvialuktun kinship terms. In spite of this strong connection to the language and the desire to learn, it is important to keep in mind that Inuvialuktun speakers and learners alike express concern for their language's future (see Oehler, 2012, for a recent study on Inuvialuktun language and identity).

2.3 Linguistic affiliations

2.3.1 The language family

Figure 2.1 on the next page shows the place of Uummarmiutun within the Eskimo-Aleut language family. The two other Inuvialuktun dialects – Siglitun and Kangiryuarmiutun – are also highlighted in the figure. Detailed divisions into sub-dialects are only shown for the Inuvialuktun dialects' immediate affiliations.

The Aleutian branch of the Eskimo-Aleut language family consists of the Unangax language Unangam Tunuu (Dorais, 2010; Alaska Native Language Center, n.d.-d). In 2007, Unangam Tunuu was spoken by 150 people in Alaska and by five people in the Commander Islands of Russia (Krauss, 2007). The Eskimo branch is divided into the sub-branches Sirenikski, Yupik and Inuktut. At the turn of the twenty-first century, the Yupik languages Central Siberian Yupik, Naukanski, Alutiiq and Central Alaskan Yup'ik had respectively 1200, 60, 200 and 10,400 speakers (Dorais, 2010: 25-6). The only language constituting the Sirenikski sub-branch, Sirenikski, was spoken in the eastern parts of Chukotka in Russia until 1997 (see Dorais, 2010: 10). As reflected in Figure 2.1, Inuktut and the Yupik languages are more closely related to each other than they are to Unangam Tunuu. Morphological similarities between Yupik and Inuktut are present e.g. among case endings and possessive suffixes (see Dorais, 2010), and if purely phonological differences are ignored, Yupik and Inuktut share between 50 and 60% of their affixes (ibid.: 23). Yupik and Inuktut also have fairly similar terms for many body-parts and animals, but some basic words – e.g. for 'see' and 'hear' – are completely different (ibid.: 24). Dialects of Inuktut are spoken in Alaska, Canada and Greenland.

Figure 2.1: Eskimo-Aleut Language Family

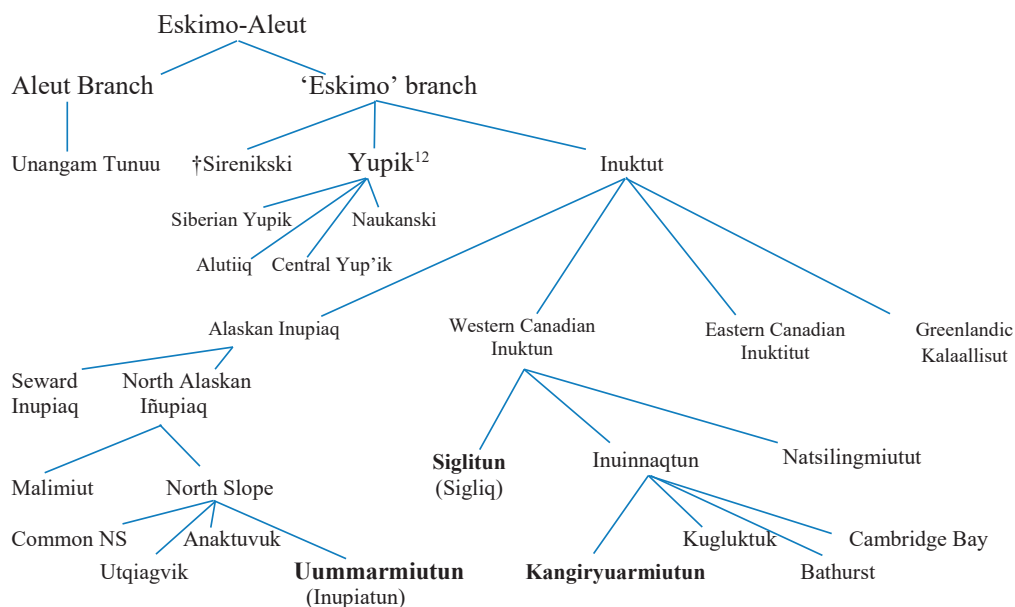


Illustration based on MacLean (1986a), Nagai (2006), Lowe (1985a) and Dorais (2010)

In Alaska, the Inuktut language is called Iñupiaq, and the main dialect division is between Seward Peninsula Inupiaq in the northwest and North Alaskan Iñupiaq in the north. The Canadian Inuktut dialects are usually grouped into Inuktitut in the east, Inuktun or Inuktu in the Central Arctic and Inuvialuktun in the Northwest Territories (Dorais, 2010: 27).

As can be read from Figure 2.1, Ummarmiutun is a dialect of Inuvialuktun along with Siglitun and Kangiryuarmiutun, though more closely related to the North Slope Iñupiaq dialect than to Siglitun and Kangiryuarmiutun. The Inuvialuktun dialects are spoken in the Inuvialuit Settlement Region in the north of the Canadian Northwest Territories (see Map 2.1 above and Map 2.2 below). The green dots in Map 2.2 represent the communities Akłavik (west) and Inuvik (east) where Ummarmiutun is spoken. Siglitun speaking communities are marked with purple. These are Paulatuk (east), Tuktoyaktuk (main land coast) and Sach Habor (north). Siglitun is also spoken

¹² Varieties of Yupik are classified as languages rather than dialects, whereas varieties of Inuktut are generally classified as dialects (see e.g. Alaska Native Language Center, n.d.-a, n.d.-b, n.d.-c; Dorais, 2010: 27).

by residents of Inuvik, as is Kangiryuarmitun. The Kangiryuarmitun community Ulukhaktuk is marked with the red dot on the map:

Map 2.2: Inuvialuit communities



© Pirurvik Centre (2017)¹³

Siglitun is said to be the oldest Inuktit dialect of the Inuvialuit Settlement Region, and this dialect was originally referred to as Inuvialuktun (see e.g. Arnold et al. 2011: 25, 69). Some speakers have told me that they prefer to use the name ‘Salliit’ instead of Siglitun. In the early 1900s, Inupiat from Alaska migrated and settled down in the forested region of the western parts of the Inuvialuit Settlement Region around the Mackenzie River Delta (Arnold et al. 2011). They came to be known as Uummarmiut, which means ‘People from the evergreens and willows’. The Uummarmiutun dialect is also known as Inupiatun as it is very closely related to Alaskan Inupiaq, and many people of Inuvik have family in Alaska. Kangiryuarmitun, which is also known as Inuinnaqtun, is spoken in Ulukhaktuk in the easternmost part of the Inuvialuit Settlement Region. Kangiryuarmitun means ‘People of the large bay’, and their dialect is closely related to the Central Arctic dialects (Inuvialuit Regional Corporation, 2017b). In connection to their work towards their land claims, Uummarmiut, Siglit and Kangiryuarmitun decided to use the name Inuvialuit to refer to themselves collectively, and Inuvialuktun to refer to their three dialects collectively (Arnold et al. 2011: 11). The negotiations took ten years, and in June 1984 the Inuvialuit and the Government of Canada signed

¹³ The indications of Inuvialuktun speaking communities and names of territories and states are added by me.

the Inuvialuit Final Agreement (see e.g. Arctic Governance, 2016; Inuvialuit Regional Corporation, 2017a). The Inuvialuit have legal control of their lands including surface rights to oil, gas and minerals and rights to hunt and harvest (Inuvialuit Regional Corporation, 2017a).

2.3.2 Similarities and differences between Inuktut dialects

The Inuktut dialects are closely related and observations made for one Inuktut dialect or group of dialects can often – but not always – be successfully generalized to other dialects. Observations from other more thoroughly described Inuktut dialects can therefore be useful in the present study of Uummarmiutun modal expressions. For instance, observations made concerning the combination of postbases in Inuktut in general will be employed in the present study to design diagnostics for determining which modal meanings are encoded by some of the Uummarmiutun modals under investigation. This section is intended to provide the reader with an impression of how closely related the Inuktut dialects are and where they tend to differ. This should enable the reader to better assess and appreciate the employment of facts about other Inuktut dialects – especially the closely related Siglitun and North Slope Alaskan Iñupiaq dialects – and hypotheses about Inuktut in general in the present study of Uummarmiutun modals.

The experience of mutual intelligibility among the Inuktut dialects at the extreme ends of the continuum varies. Some speakers from Greenland report that they speak to Alaskan Inuit in Kalaallisut, while some speakers from the Inuvialuit Settlement Region report that Kalaallisut is spoken so fast that it is sometimes very difficult to understand. Nagai (2006) emphasizes the unintelligibility of the east-west extremes of the Inuktut language, while Dorais (2010: 27) writes that all Inuktut speakers “[...] *share a common means of communication and, with some adjustments, can understand each other*”. Close affinity apparently does not guarantee mutual intelligibility: according to Lanz, speakers of the Malimiut Coastal dialect have difficulties understanding the Malimiut Kobuk variety (2010), in spite of both of them being sub-dialects of Alaska Malimiut Inupiaq. Speakers of Inuvialuktun, on the other hand, usually report that they can communicate with speakers of the other Inuvialuktun dialects with no difficulty. The remainder of this section provides a few examples of differences among the Inuktut dialects. The examples are by no means exhaustive, and they are merely intended to give an impression of what the variation among Inuktut dialects may look like (see e.g. Fortescue, 1985, for details).

Differences between the Inuktit dialects are found on the phonological level as well as in grammatical and semantic domains.¹⁴ Inuktit has three short vowels which are orthographically represented in roman writing¹⁵ as *i*, *u* and *a* plus their long counterparts *ii*, *uu* and *aa*. The Diomedé dialect – which is a sub-dialect of Seward Inupiaq – is the only Inuktit dialect with a fourth vowel *e*, which is also still heard in Yupik (Dorais, 2010: 29). This fourth vowel is said to be present synchronically in Uummarmiutun as what is referred to in Inuktit linguistics as a ‘weak *i*’ (see e.g. Lowe, 1984: xix-xx; MacLean, 1986a: 19-23). Weak *i* does not cause palatalization, as opposed to the ‘strong *I*’ which does. The two sounds labelled weak *i* and strong *I* are strictly speaking pronounced the same, and their phonological properties merely differ in how they affect their surroundings. The closely related Malimiutun and North Slope dialects differ in that the former is less assimilative than the latter (Dorais, 2010: 31). For instance, the Malimiutun word for ‘dog’ is *qipmiq*, while speakers of North Slope Inupiaq in Utqiaġvik and Uummarmiutun speakers in Inuvik say *qimmiq*. Elements within the sound inventory vary among the Inuvialuktun dialects; Uummarmiutun and Kangiryuarmitun use *h* in environments where Siglitun use *s*:

<u>NS Inupiaq</u>	<u>Uummarmiutun</u>	<u>Siglitun</u>	<u>Kangiryuarmitun</u>	<u>English</u>
savik	havik	savik	havik	knife
aniqsaaq-	aniqhaaq-	aniqsaaq-	aniqhaaq-	to breathe

(Dorais, 2010; Lowe, 1984; 2001; MacLean, 2014)

MacLean (2014: xxii) and Dorais (2010: 30) note that in the Anaktuvuk dialect of North Slope Inupiaq, *h* is sometimes used instead of *s*. Lawrence Kaplan (p.c. 2013) also points out that the Uummarmiutun dialect is very similar to the one spoken in Anaktuvuk Pass, and Lowe (1985a: xv) states that Uummarmiutun speakers whose ancestors came from the Anaktuvuk Pass area tend to use *h* whereas Uummarmiutun speakers whose families came from the North Slope further north tend to use *s*.

¹⁴ For the sake of simplicity and the present thesis’s focus on semantics and pragmatics, I have used orthographic representations of the Inuktit sound patterns rather than accurate phonetic representations. I shall not go into details regarding the phonology of Inuktit due to the scope of the thesis, but merely indicate that phonological processes have taken place when this is relevant. To learn about Inupiaq phonology, the reader is referred to MacLean (2014) and Kaplan (1981).

¹⁵ In Nunavut and Nunavik, syllabics are also in use.

Some of the morphological differences among the Inuktut dialects pertain to temporal marking. Uummarmiutun and the Iñupiaq dialects in Alaska mark a distinction between present and past tense through inflection of the verb ending. Other Inuktut dialects mainly use postbases (see e.g. Trondhjem, 2008: 10). The following examples are from Trondhjem (2008):

(2.1)

- | | |
|---|--|
| <p>a. <u>West Greenlandic</u>
 <i>anisimavoq</i>
 ani - sima - voq
 go.out - PERF - IND.3.SG
 ‘He has left / He left’</p> | <p>b. <u>Inuktitut</u>
 <i>anilaurtuq</i>
 ani - laur - tuq
 go.out - YSTR.PAST - PART.3.SG
 ‘He left yesterday’</p> |
| <p>c. <u>Iñupiaq</u>
 <i>aniruaq</i>
 ani - ruaq
 go.out - IND.PAST.3.SG
 ‘He left’</p> | <p>(Trondhjem, 2008: 180):¹⁶</p> |

Present tense in Iñupiaq is marked with *-tu-* instead of *-tua-* on intransitive verbs. The person marker, e.g. *-q* for 3rd person singular, remains the same in present and past indicative. Transitive verbs in the indicative present are marked with *-ki-* or *-gi-* if the subject is 1st or 2nd person, and *-ka-* or *-ga-* if the subject is 3rd person. In addition to this comes a person marker that varies according to the person and number of the subject and the object. Transitive verbs in the indicative past carry the marker *-raq* or *-taq* regardless of the person of the subject. The person marker added to *-raq* or *-taq* often deletes the *q*, and like the present endings, it varies according to the person and number of the subject as well as object (MacLean, 1986a: 70).

Uummarmiutun displays the same past-present opposition in the verbal inflection as Iñupiaq. As noted above, most Inuktut dialects do not display such oppositional temporal inflections. Rather, the temporal (and aspectual) interpretations in those dialects depend on the inherent meaning of the verb base (e.g. *ani-* in (2.1)) plus any postbases (e.g. *sima* in (2.1a) and *lauq* (rendered as *laur*) in (2.1b)) that are present. This is demonstrated by Hayashi (2011) for South Baffin Inuktut, where “[...] the present tense is indicated by the absence of an explicit tense marker, and the aspectual interpretation of a present-tensed (i.e., zero-marked) verb is determined

¹⁶ The segmentation and glossing are from Trondhjem (2008). The glosses are translated from Danish by me.

by the durativity of the base.” (ibid.: 178). In the absence of a tense marker, a durative denoting verb base yields an imperfective interpretation, and a punctual denoting verb base yields a perfect interpretation (ibid.). Moreover, as Hayashi (2011) argues, South Baffin has five past tenses and three future tenses which are expressed by means of postbases. Postbases may change the aspectual interpretation (see e.g. Johns, 1987; Swift, 2004; Spreng, 2012). As Spreng (2012) shows, the antipassive marker (which is a postbase) occurs on punctual telic verb bases and yields imperfective interpretations. Temporal and aspectual interpretations in most Inuktitut dialects thus depend on the lexical aspect of the verb base plus temporal postbases if those are present.

Even though Uummarmiutun verb endings, like verb endings in Inuktitut dialects in Alaska, do mark a temporal opposition, the inherent properties of the verb stem still affect the temporal and aspectual interpretation of the verb. As seen in Lowe (1985a: 112) the present tense declarative verb ending in combination with a punctual denoting verb base such as *katak-* ‘fall off’ and *ani-* ‘go out’ express what Lowe (ibid.) calls an ‘immediate past’ interpretation. This is also the case in Inuktitut according to Spreng (2012: 93-4). Consider the difference between the temporal-aspectual properties of (2.2a-b) below where both are marked by the declarative present verb ending. The combination of this ending with the stative verb base *yara-* ‘be tired’ appears to refer to a durative episode in the present, whereas the combination with the punctual verb *katak-* ‘fall off’ seems to refer to an accomplishment in the immediate past:

(2.2)

- | | | | |
|----|--|----|--|
| a. | yaraŋuq
yara - ŋuq
tired - IND.3.SG
‘he is tired’ | b. | qallutiga kataktuq
qalluti ¹⁷ - ga katak - tuq
cup - POS.1.SG fall - IND.3.SG
‘my cup fell off’ |
|----|--|----|--|
- (Lowe, 1985a: 112)¹⁸

As for the past declarative verb ending *-tuaq*, Lowe (ibid.: 112) writes that this is used when the event has not occurred within the communication situation, but rather e.g. the day before or while

¹⁷ The reader may be aware that the singular absolutive form of the word for ‘cup’ is *qallun* and hence wonder about the segmentation in (2.2b), more specifically about the material represented orthographically as *ti*. Judging from MacLean’s (1986a: 75) analysis of the North Slope Inupiaq word *aŋun* ‘man-ABS.SG’, it seems that *ti* is part of the underlying form of the nominal root, but when no endings are attached, the weak *i* deletes and the *i* nasalizes. These phonological processes do not apply in (2.2b), where the root is followed by a possessive ending, and therefore *ti* appears on the surface.

¹⁸ The examples and translations are from Lowe (1985a: 112). The segmentation is my own responsibility.

the speaker was at a different location. Consider (2.3a-b) below which both carry the past declarative ending. Again, the inherent properties of the respective verb stems yield an imperfective and a perfective interpretation respectively, however with anchoring in the past rather than the present:

(2.3)

- | | | | |
|----|--|----|---|
| a. | yaraḞuaq
yara - Ḟuaq
tired - IND.PAST.3.SG
'he was tired' | b. | qallutiga kataktuaq
qalluti - ga katak - tuaq
cup - POS.1.SG fall - IND.PAST.3.SG
'my cup fell off (at that time)'
(Lowe, 1985a: 112) ¹⁹ |
|----|--|----|---|

Last but not least, Inuktit dialects display different lexical inventories and degrees of productivity of the postbases. The prospective aspect suffix *-si* in Inuktitut is for instance not productive in West Greenlandic (Swift, 2004: 32), and Inuktitut has a rich inventory of temporal remoteness-suffixes which are not attested in West Greenlandic (ibid.). Lexical inventories also differ between dialects that are more closely related than Inuktitut and West Greenlandic. During one of our meetings, a speaker of Uummarmiutun shared a couple of stories with me where speakers of Alaskan Iñupiaq had used a word that did not exist in the Uummarmiutun dialect. One example pertained to the word for 'axe'. In Alaskan Iñupiaq, the word *anauttaq* may be used with the meaning 'axe', but this word does not exist in Uummarmiutun. In Uummarmiutun, the word for 'axe' is *ippitauraq*, which is another word for 'axe' in North Slope Iñupiaq (MacLean, 2014: 118).

2.4 Grammar

2.4.1 Postbases

The languages in the Eskimo branch of the Eskimo-Aleut language family – i.e. Yupik, Serinikski and Inuktit – are all agglutinative, and very rich in morphology. As for the verbs, the only obligatory inflection is an ending which specifies person and number of the subject and the object

¹⁹ The examples and translations are from Lowe (1984: 112). The segmentation is my own responsibility.

(if present) as well as mood. Noun endings specify case and number. Inuktit languages have a few enclitics and a large number of ‘postbases’.²⁰ Like the enclitics, postbases are optional. The postbases occur in between the noun- or verb base and the ending, and they are used to add a wide range of different meanings to the interpretation (see Johns, 2014). Some of them express concepts like ‘establish’, ‘envy’ and ‘make’, while others express more abstract notions like modality and negation. Nagai (2006) models the structure of the Iñupiaq word as follows:

Figure 2.2: The Inuktit word

$$\frac{\text{base + (any number of postbases)}}{\text{stem}} + \text{ending} + \text{any number of enclitics}$$

Nagai (2006: 35)

In Inuktit, the postbase generally scopes over everything to its left (Fortescue, 1980, 1983). (2.4) below illustrates the formation of Inuktit verbal words with examples from the North Slope Iñupiaq dialect, which is closely related to Uummarmiutun:

(2.4)

- a.

<i>verb base</i>	<i>verb ending</i>		<i>word</i>
niġi	ruq	→	niġiruq
to eat	she/he/it		she is eating
- b.

<i>verb base</i>	<i>postbase</i>	<i>postbase</i>	<i>postbase</i>	<i>ending</i>		<i>word</i>
niġi	+ñiaq	-ġit-	+palliġ-	+suq	→	niġiñiaġitpalliġsuq
to eat	will	not	probably	she/he/it		she probably will not eat ²¹

(MacLean, 2014: ix-x)

Verbal words may also be derived from a noun base, as illustrated with *iglu* ‘house’ in example (2.5) below. In order to become a verb and be suitable for a verb ending, the noun will need a noun to verb deriving postbase such as *nik* ‘obtain’ in (2.5):²¹

²⁰ Other linguists use the term ‘suffix’ (Lowe, 1984, 1985a) or ‘affix’ (e.g. Fortescue, 1985) rather than ‘postbase’. I shall use the term ‘postbase’ like e.g. MacLean (2014) and Briggs, Johns and Cook (2015) for the sake of clarity; the term ‘suffix’ or ‘affix’ could be understood in a broader sense where they include enclitics in addition to postbases.

²¹ MacLean’s (2014) dictionary indicates which part of speech a postbase can attach to and whether or not it changes the category of the stem.

(2.5)	<i>noun base</i>	<i>postbase</i>	<i>postbase</i>	<i>ending</i>	→	<i>word</i>
	iglu	+qpak	-nik-	+tuq		igluqpaniktuq
	house	big	obtain	she/he/it		she acquired a big house

(MacLean, 2014: x)

The four modal expressions discussed in depth in the present thesis are all postbases, and the investigation pertains to their contributions to verbal words. I shall therefore limit the present outline of postbases in Inuktitut to verbal words.

As indicated by Nagai’s (2006: 35) template in Figure 2.2, the verb stem to which the verbal ending attaches may consist of a base only, as in (2.4a), or of a base plus postbases, as in (2.4b). In (2.4a), the verb base²² *nigi* ‘eat’ – which is not a word on its own – receives the verb ending *-ruq*, which marks the following information: 3rd person, singular, intransitive, indicative and present. In (2.4b), several postbases are attached to *nigi* ‘eat’ before the verb ending, namely *+ñiaq* ‘will’, *-nit-* (not) and *+palliq-* ‘probably’. MacLean (2014) uses symbols like + and - to indicate the phonological properties of the respective postbases. Also verb endings are sensitive to their phonological environment, hence the variation between *-ruq*, *-suq* and *-tuq* in (2.4) and (2.5).

The order of postbases in the Inuktitut verb is generally so that postbases with aspectual meaning precede postbases with temporal meaning which precede postbases with epistemic meaning. This is illustrated in the following template:

Figure 2.3: Scope

stem + (aspectual affix) + (tense affix) + (epistemic modality) + inflection
(see Fortescue, 1980; Trondhjem, 2009)

The position of an ambiguous postbase in relation to other postbases can be used to disambiguate its meaning contribution. In the West Greenlandic example in (2.6a) below, the postbase *ssa* precedes the postbase *sima*, and the former contributes future tense meaning whereas the latter contributes with epistemic modal meaning. In (2.6b), the order is opposite. Here *sima* precedes *ssa*,

²² In addition to the verb- and noun bases, the Inuktitut lexicon also contains units which MacLean (2014) calls ‘roots’. Unlike verb- and noun bases, which can take an ending appropriate for their part of speech, the lexemes listed as roots cannot take an ending until a postbase is attached (MacLean, 2014: xxv). North Slope Iñupiaq *alapi-* ‘ignorance, confusion’, for instance, is a root, and as such it cannot take verb endings or noun endings unless a postbase is added. The addition of e.g. the verb deriving postbase *t* ‘to accomplish the V-ing or the state being indicated by V’ (MacLean, 2014: 663) results in a verb stem *alapit-* meaning ‘to become confused’ which as a verb stem can take verbal endings (see MacLean, 2014: xxv).

and *sima* contributes with aspectual meaning while it is *ssa* that contributes with epistemic modal meaning:

(2.6) West Greenlandic

- a. Atussasimavaa
atur - ssa - sima - vaa
use - FUT - MODL - IND.3.SG.SUBJ.3.SG.OBJ
'He presumably will have used it.'
- b. Atursimassavaa
atur - sima - ssa - vaa
use - PERF - EPIST - IND.3.SG.SUBJ.3.SG.OBJ
'He must have used it' (Fortescue, 1980: 267-8)

When a postbase occurs alone, there is obviously no other postbase in relation to which its place can be determined (Fortescue, 1980: 267; see also Trondhjem, 2008: 55). Hence, in a sentence where *sima* is the only postbase, the meaning contributed by *sima* is ambiguous between (at least) perfective aspect and epistemic modal meaning:

(2.7) West Greenlandic

- Tikissimapput
tikis - sima - pput
ankomme - PERF - IND.3.PL
'They have come / Apparently they came' (Fortescue, 1980: 267)

Similarly, in Uummarmiutun, some postbases may express different meanings depending on the position they occupy in relation to another postbase within the word. According to Lowe (1984: 146-7), the postbase *niaq* has two different meanings 'try to' and 'future'. During the interviews conducted for the present study, the contribution of *niaq* was generally translated into 'try to' when it occurred closer to the verb stem than *lla* 'can', as in (2.8). When *niaq* is closer to the ending than *lla* 'can', it generally yields a future interpretation, as in (2.9):

(2.8)

- a. Aturniallaŕuq
atuq - niaq - lla - ŕuq
sing - try.to - can - IND.3.SG
'He can try to sing' (in the deontic ('permission') sense of *can*) (Field notes)²³
- b. Havangniallaŕuq
havak - niaq - lla - ŕuq
work - try.to - can - IND.3.SG
'He could try to work.' (Field notes)

(2.9)

- Havallaniaqtuq
havak - lla - niaq - ŕuq
work - can - FUT - IND.3.SG
'He is going to be able to work.' (Field notes)

As predicted from the general scope structure of Inuktitut verbs rendered in Figure 2.3 above, it is reasonable to expect that postbases expressing epistemic modal meaning will follow *niaq* 'FUT' as seems to be the case in (2.10):

(2.10)

- Aniniarungnaqtuq
ani - niaq - hungnaq - ŕuq
go.out - FUT - maybe - IND.3.SG
'Maybe he is going out' (Field notes)

The interpretation of a postbase is thus sensitive to the place it occupies in relation to other postbases. Conversely, the grammatically appropriate place of a postbase in the verbal word may also depend on its encoded meaning. It appears – at least in Uummarmiutun – that some postbases are blocked from occurring in certain orders, because their encoded meaning is not compatible with an interpretation which is in accordance with the given position. According to data like (2.11), for instance, it appears that negation markers co-occurring with expressions of epistemic modality have to precede the epistemic modal expression.²⁴ The opposite order is rejected:

²³ Examples marked as 'Field notes' are data collected with speakers during the fieldwork conducted for the present study.

²⁴ This is at least the case when *hungnaq* is used, given data like (2.11). As for wide scope interpretations, such as *It is not possible that he is at work*, there is no data in the data set indicating whether and if so how sentences yielding this interpretation are constructed in Uummarmiutun.

(2.11)

- a. Iqhinngitchungnaqtuq
iqhi - **nngit** - **hungnaq** - chuq
scared - NEG - maybe - IND.3.SG
'Maybe he's not scared.' (Field notes)
- b. *Iqihungnanngitchuq
iqhi - **hungnaq** - **nngit** - chuq
scared - maybe - NEG - IND.3.SG
REJECTED (Field notes)

As for the relational order of postbases with modal meaning properties in Inuktitut, Fortescue (1980: 272) points out that epistemic modal affixes belong in what he calls the 'V_s' slot, whereas affixes with root senses belong in the 'V_e' slot. 'V_s' is the slot for sentential verbal affixes. It is relationally closer to the verb ending than 'V_e', which is the slot for base-expanding affixes (see rewrite rules in Fortescue, 1980: 261). That is, the expected order of affixes with root modal meaning and affixes with epistemic modal meaning is such that the former precedes the latter. This is represented as follows in Boye (2012a: 229) who follows Fortescue (1980):

Figure 2.4

extender < modifier < tense < epistemic < colorator < conj./illoc.

The types of affixes relevant to the present purpose are 'extender' which includes affixes with non-epistemic modal meaning and 'epistemic' which includes affixes with epistemic modal meaning (see Boye, 2012a: 229; Fortescue, 1980). As for the internal ordering of epistemic affixes – i.e. of affixes with evidential meaning in relation to affixes with epistemic modal meaning – there is some tendency in the linguistics literature to assume that epistemic modal expressions occur inside the scope of evidential expressions (e.g. Cinque, 1999: 106; Nuyts, 2009: 156²⁵). This is, however, as Boye (2012a: 236-242) demonstrates, no more than a tendency at best. There is hence no basis for expecting a certain internal order of postbases with epistemic modal and evidential meaning in Inuktitut.

²⁵ It should be noted that Nuyts (2009) assumes the hierarchical relation between evidentiality and epistemic modality on mainly conceptual grounds.

In summary, some postbases in Inuktut are tied to certain positions in relation to other postbases because of the meaning they encode, while other postbases may be used in different positions in relation to other postbases and express different meanings depending on the position. The distribution and available interpretations of certain postbases are hence predictable in accordance with the template in Figure 2.4 above. As we shall see in Chapter 5, these morphosyntactic generalizations for Inuktut (Fortescue, 1980) can be used as diagnostics for determining whether *hungnaq* ‘probably’ and *řukřau* ‘must, has to’ are restricted to either epistemic or root modal meanings (see also Chapter 4, §4.2.2.2, Elicitation Frame E).

2.4.2 Uummarmiutun verbs

The Uummarmiutun examples provided in this section mainly come from Lowe’s (1985a) grammar book. When possible, examples are provided from more recent sources such as stories by Mangilaluk (2015) or Panigavluk (2015) or field notes from the present study. The latter includes words and sentences approved or volunteered by consultants during the interviews.

Uummarmiutun verb endings follow a phonological pattern like the one found in North Slope Iñupiaq and other Inuktut dialects. The indicative intransitive 3rd person singular endings, for instance, alternate between *-řuq*, *-tuq*, *-huq* and *-chuq* depending on the final sound of the verb stem as well as whether or not this final sound is preceded by a ‘strong *I*’:²⁶

Table 2.1: Sound alternations in verb endings

<u>Verb stem ends in:</u>	<u>Ending begins in:</u>	See example:
Vowel	<i>ř</i>	(2.12a)
Consonant	<i>t</i>	(2.12b-d)
Strong <i>I</i> + <i>k</i>	<i>h</i>	(2.12e)
Strong <i>I</i> + <i>q</i>	<i>h</i>	(2.12f)
Strong <i>I</i> + <i>t</i>	<i>ch</i>	(2.12g)

²⁶ See §2.3.2 above, Lowe (1985a: xix-xx) and MacLean (1986a: 19-23) for details on strong *I* and weak *i*.

(2.12)

- | | |
|---|---|
| a. Niri<u>fuq</u>
niri - fuq
eat - IND.3.SG
'He/She/It is eating' (Lowe, 1985a: 113) | b. Tautuk<u>tuq</u>
tautuk - tuq
see - IND.3.SG
'He/She/It sees' (Lowe, 1985a: 113) |
| c. Taamna inuk utiq<u>tuq</u>
taamna inuk utiq - tuq
that person return - IND.3.SG
'That person has returned' (Field notes) | d. Aquvitt<u>uq</u>
aquvit - tuq
sit.down - IND.3.SG
'He/She sat down' (Lowe, 1985a: 114) |
| e. Ihummitqik<u>huq</u>
ihummitqik - huq
change.mind - IND.3.SG
'He/She changed her/his mind' (Lowe, 1985a: 114) | f. Ugiarniq<u>huq</u>
ugiaq - niq - huq
fight - apparently - IND.3.SG
'He is fighting!' (Field notes) |
| g. Nirillait<u>chuq</u>
niri - llait - chuq
eat - cannot - IND.3.SG
'He can't eat'. (Field notes) | |

Ummarmiutun verbs mark the person and number of their arguments.²⁷ In the examples in (2.12), one argument is marked on the respective verbs. An example of a transitive construction is given in (2.13). Transitive verb endings mark the person and number of the subject and the object:

(2.13) Uqauhira piqpagivalukkkiga.

- | | |
|--|---|
| Uqauhiq - ra
Language - POS.ABS.1.SG.SUBJ.3.SG.OBJ
'I love my language dearly' | piqpagi - vialuk - kiga
love.dearly - really - IND.1.SG.SUBJ.3.SG.OBJ
(Panigavluk, 2015: 3) |
|--|---|

The reader may have noticed that the words in (2.12c-e) are translated into English with past tense, while the rest of the words in (2.12) are not, even though all of them carry the same ending. This variation is, as mentioned earlier, due to the inherent semantics of the verb base. The same phenomenon is present in other Inuktitut dialects, such as Inuktitut. Swift (2004) writes that the temporal interpretation of zero-marked verbs (i.e. verbs without postbases) in Inuktitut varies between perfective/past on the one hand and imperfective/present on the other. This variation

²⁷ Lowe (1985a,b) uses the term 'single person markers' for endings marking one argument and 'double person markers' for endings marking two arguments.

depends on the semantics of the verb base (Swift, 2004: 36). As for the Uummarmiutun words in (2.12), *utiq-* ‘return’, *aquvit-* ‘sit down’ and *ihummitqik-* ‘changing one’s mind’ are all punctual, and hence the perfective/past interpretation of the verb. It is important to note that it is not only the verb base, but the verb *stem* as a whole, i.e. base *plus* postbases, that affects the temporal-aspectual interpretation.

As in most Inuktit dialects, Uumammiutun verbs are sensitive to three numbers, namely singular, dual and plural, and to three persons, namely 1st, 2nd and 3rd. The Uummarmiutun indicative intransitive verb endings are given in Table 2.2:

Table 2.2: Indicative intransitive verb endings in Uummarmiutun

	Present/immediate past	Past / speaker absent at event time
1.SG	tunga	tuanga
2.SG	tutin	tuatin
3.SG	tuq	tuaq
1.DU	tuguk	tuaguk
2.DU	tutik	tuatik
3.DU	tuk	tuak
1.PL	tugut	tuagut
2.PL	tuhi	tuahi
3.PL	tut	tuat

It is possible to break down each verb ending in Table 2.2 even further into 1) a mood marker *-tu* for present indicative intransitive and *-tua* for past indicative intransitive and 2) a person+number marker, e.g. *-nga* for 1st person singular, *-tin* for 2nd person singular etc., as Lowe (1985a) does with his ‘event marker’ and ‘person marker’. Such level of detail is not necessary for the present study. In the glossing of the data throughout the thesis, mood, person and number are indicated, but tense is only indicated when it is past tense.²⁸

The final aspect of Uummarmiutun verbal morphology that will be presented here is mood. The presentation of Uummarmiutun moods will be done fairly superficially, as the sentences discussed in the collected data are mainly in the indicative mood. The Uummarmiutun moods –

²⁸ A similar decision is made by MacLean (1986a: 269-271) in the glossary of verb endings in her school grammar book, where she distinguishes between ‘indicative’ and ‘indicative past’

apart from the indicative, which has already been introduced – are presented below as they are described by Lowe (1985a) along with intransitive example sentences.

Imperative

The Ummarmiutun imperative mood is used to express commands and orders (Lowe, 1985a: 148).

(2.14) Aquvittin!

aquvit - tin
sit.down - IMP.2.SG
Sit down! (addressing one person) (Lowe, 1985a: 149)

Interrogative

The interrogative mood marker is used for asking questions, however mainly when the speaker wishes to express that they have no idea about the answer. To ask for confirmation, the declarative mood is used plus rising intonation and lengthening of the vowel of the last syllable of the verb (Lowe, 1985a: 140).

(2.15) Akimava?²⁹

akima - va
win - INT.3.SG
Did he win? (Lowe, 1985a: 140)

Optative

Verbs with an optative mood ending pronounced with falling intonation are used to either prompt or incite the realization of the state of affairs, i.e. it is a type of imperative:

(2.16)

- | | | | |
|----|-------------------|----|-------------------|
| a. | Aniluk! | b. | Anili! |
| | ani - luk | | ani - li |
| | go.out - OPT.1.DU | | go.out - OPT.3.SG |
| | 'Let's go out' | | 'Let him go out!' |

Lowe (1985a) writes that utterances of sentences in the optative mood pronounced with a rising intonation express a wish or a suggestion:

(2.17) Qaitqulagu?

qai - tqu - lagu
come - ask - OPT.1.SG.SUBJ.3.SG.OBJ
'Should/may I ask him to come in?' (Lowe, 1985a: 155)

²⁹ The question mark is strictly speaking not necessary in the graphic rendering of the Ummarmiutun sentence, as the interrogative mood is already marked by the verb ending.

Conditional

Lowe (1985a: 161) writes that the conditional marker is used in the subordinate clause of the conditional construction to express the circumstance conditioning the event expressed by the main clause. In the example below, the realization of the state of affairs expressed in the main clause *uqallautiniaraatin* ‘he will tell you’ is conditioned by the possible realization of the state of affairs expressed by the conditional clause *qaiḡumi* ‘if he comes’, which is syntactically dependent on the main clause:

(2.18) *Qaiḡumi uqallautiniaraatin*

qai - ḡumi uqallauti - niaq - raatin
come - COND.3.SG tell - FUT - IND.3.SG.SUBJ.2.SG.OBJ
‘If he comes, he will tell you’

Causative

Like the conditional mood, the causative mood occurs on the dependent clause. The causative mood marker is used to “[...] express a when clause involving a past event that precedes in time another past event.” (Lowe, 1985a: 181).

(2.19) *Tikiñmata hiñiktuagut*

tikit - mata hiñik - tuagut
arrive - CAUS.3.PL sleep - IND.PAST.1.PL
‘When they (PL) arrived, we (PL) were sleeping.’ (Lowe, 1985a: 196)

The causative marker may also be used to express a cause-effect relationship between the state of affairs expressed by the subordinate clause and the state of affairs expressed by the main clause (Lowe, 1985a: 181).³⁰

Conjunctive

The conjunctive mood marker has several functions. One of them is to mark a subordinate clause that expresses the manner in which the state of affairs expressed by the main clause is carried out (Lowe, 1985a: 200):

(2.20) *Pihukataaqḡuni nunavingmungniaqtuq*

pihukataaq - ḡuni nunavik - muk - niaq - tuq
go.on.foot - CONJ.3.SG hill - towards - try.to/FUT - IND.3.SG
‘He went to the hills on foot’ (ibid.)

The conjunctive mood is also used to mark clauses setting the frame during which the state of affairs in the main clause take place (ibid.):

³⁰ Uummarmiutun verbs marked in the conditional and causative moods alike may be translated into English as *when*-clauses. The crucial difference between the two moods is that whereas verbs in the conditional mood express events that may or may not be actualized, the verbs in the causative mood are restricted to realis interpretations.

(2.21) Qayaqtuqhunuk kiñ'ngufuguk

qayaq - tuq - hunuk kiñ'ngu - fūguk

qayaq - using - CONJ.1.DU capsize - IND.1.DU

'While we (two) were qayakking, we (two) capsized' (Lowe, 1985a: 216)

Another function of the conjunctive mood is to mark the clause expressing the reason for the state of affairs expressed by the main clause. This is not as in the sense of a temporal sequence, but rather similar to the 'frame sense' (ibid.):

(2.22) Yaravlunga aifunga

Yara - vlunga ai - fūnga

tired - CONJ.1.SG go.home - IND.1.SG

'Because I was tired, I went home' (Lowe, 1985a: 217)

The conjunctive marker may also be used to link a complex event expressed by a construction consisting of more than one verb (Lowe, 1985a: 201-202):

(2.23) Makilluni anifuq

makit - luni ani - fūq

get.up - CONJ.3.SG go.out - IND.3.SG

'Getting up, he went out.' (Lowe, 1985a: 201)

Contemporative

The contemporative mood marker is used to express that two events are progressing simultaneously in time (Lowe, 1985a: 231):

Muqpaufillarma naalaktuaqtuanga

muqpaufi - llarma naalaktuaq - tuanga

make.bread - CONT.1.SG listen.to.radio - IND.PAST.1.SG

'While making bread, I was listening to the radio.' (ibid.)

2.4.3 Uummarmiutun nouns

As in other Inuktitut dialects, Uummarmiutun noun endings mark number (singular, dual or plural) and case. Possession is also marked on the noun when necessary. Like the verb endings, noun endings are subject to phonological processes depending on the final sound of the noun stem to which they attach. There are eight noun cases in Uummarmiutun. Some of them are used to mark syntactic relations between the arguments in the sentence, while others are semantic cases. Some may serve both syntactic and semantic purposes. The functions of the respective cases are listed below in accordance with their descriptions in Lowe's (1985a) grammar book:

Absolutive

Marks the subject of an intransitive verb:

(2.24) Taamna **inuk** utiqtuq

Taamna inuk - Ø utiq - tuq
DEM person - ABS.SG return - IND.3.SG
'That person has returned' (Field notes)

Marks the object of a transitive verb:

(2.25) **Qaluk** qimmim nirigaa

qaluk - Ø qimmiq - m niri - gaa
fish - ABS.SG dog - REL.SG eat - IND.3.SG.SUBJ.3.SG.OBJ
'The dog ate the fish.' (Lowe, 1985a: 118)

Relative

Marks the subject – if third person – of a transitive verb as in (2.25) above and (2.26) below:

(2.26) Arnam amiiraa

arnaq - m amii - raa
woman - SG.REL skin - IND.3.SG.SUBJ.3.SG.OBJ
'The woman skinned it.' (Lowe, 1985a:60)

Marks the possessor of possessive relations:

(2.27) Arnam qitaufanga

arnaq - m qitaufaq - nga
woman - SG.REL dress - POS.ABS.3.SG.3.SG
'The woman's dress.' (ibid.)

Modalis

Marks the objects of intransitive verbs, i.e. verbs marked for only one argument. These are interpreted as indefinite objects:

(2.28) Taimani iñuit ivaqfiraqtut anguniallañuam**ik**.

Taima - ni iñui - t ivaqfiq - haq - tut anguniaq - lla - ñuaq - mik
Back.then - PL.LOC people - ABS.PL look.for - get/fix - IND.3.PL hunt - can - one.who - SG.MOD
'Long ago, people would look for a person who could hunt' (Mangilaluk, 2015: 5)

Marks the instrument with which the action in the verb is done:³¹

³¹ Constituents in the modalis case are never marked on the verb. Even if the semantics had not made it clear that the woman is sewing something else with the needle rather than sewing the needle, this would have been clear from the case marking and the verb ending.

- (2.29) Mitqun**mik** killaiyaraa
 mitqun - mik killaiyaq - raa
 needle - SG.MOD sew - IND.3.SG.SUBJ.3.SG.OBJ
 ‘She sewed it with a needle.’ (Lowe, 1985a: 64)

The strictly semantic cases in Uummarmiutun are terminalis, ablative, vialis, locative and similaris:

Terminalis

Marks the endpoint of a movement or the recipient of an object:

- (2.30) Nutaramun atigiliuqtuq
 nutaraq - mun atigi - liuq - tuq
 child - SG.TERM parka - make - IND.3.SG
 ‘She made a parka for the child’ (Panigavluk, 2015: 16)

Ablative

Expresses a movement away from the entity denoted by the noun.

- (2.31) Inuvingmiñ tikitqammiqhunga
 Inuvik - miñ tikit - qqammiq - hunga
 Inuvik - SG.ABL arrive - recently - IND.1.SG
 ‘I just arrived from Inuvik’ (Panigavluk, 2015: 17)

Vialis

Expresses a movement through the entity denoted by the noun, or that the movement was facilitated by means of the entity denoted by the noun:

- (2.32)
- a. Paulatuukun iglaufuat.
 Paulaluk - kun iglau - fuat
 Paulatuk - SG.VIA travel - IND.PAST.3.PL
 ‘They travelled by/through Paulatuk.’ (Lowe, 1985a: 49)

 - b. Tingmifualukun aullaqtut.
 tingmifualuk - kun aullaq - tuq
 plane - SG.VIA leave - IND.3.SG
 ‘He left by plane’ (ibid.)

Locative

Marks that the noun denotes a location in space or time (see the word *taimani* in (2.28) above).

Similaris

Expresses ‘likeness’ or ‘similarity’ with the entity denoted by the noun serving as a basis of comparison.

(2.33) Atigiga ukalliq**tun** nirummakktuq

atigi - ga ukalliq - tun nirummakk - tuq
parka - POS.ABS.1.SG.3.SG rabbit - SG.SIM soft - 3.SG
‘My parka is soft like a rabbit.’ (Panigavluk, 2015: 17)

2.5 Summary

The chapter has provided a basic overview of Uummarmiutun grammar with emphasis on verbal postbases, since the Uummarmiutun expressions in the focus of the present study are all verbal postbases. As demonstrated, the relative order of the postbases within an Inuktut word may affect the meaning expressed by the respective postbases. The other way around, some postbases are restricted to certain slots within the verbal word due to the type of meaning they encode (Fortescue, 1980). These observations made for postbases in Inuktut in general in the present chapter will serve as diagnostics in Chapter 5 for determining exactly which modal type restrictions – i.e. root, epistemic or both – are encoded by the Uummarmiutun modals in focus of the study (see also Chapter 4, §4.2.2.2). Affixes expressing epistemic modal meaning belong in the slot relationally closer to the verb ending than affixes expressing root modal meaning (Fortescue, 1980: 261, 272). The prediction is that if a postbase may be used to express both types of modal meaning then it may occur in both slots and change its meaning accordingly. If, on the other hand, a postbase is restricted to root modal meaning, the prediction is that it is restricted to the slot relationally closer to the stem, whereas a postbase restricted to epistemic modal meaning will be restricted to the slot relationally closer to the ending.

In Chapter 5, descriptions of cognates in other Inuktut dialects will be used to shed light on and compare the meanings of the Uummarmiutun postbases under investigation. The present chapter has therefore addressed the interrelatedness between Inuktut dialects and provided an

overview of their affiliations in order to allow the reader to assess the occasional comparison of Uummarmiutun modals with cognates in other Inuktut dialects.

Chapter 3:

Defining modality

3.1 Introduction

3.1.1 Overview of the chapter

The chapter is concerned with the following two interrelated tasks; 1) find a suitable definition of what modal meaning is, which allows us to 2) delimit the borders between modal meaning and neighboring meanings. These tasks are necessary in order to understand the phenomenon under investigation and in order to be able to recognize an Uummarmiutun modal expression as such. Questions concerning how to account for the semantics and pragmatics of individual modal expressions are left to Chapter 6, as some of these questions will be guided by the Uummarmiutun data presented and analyzed in Chapter 5. Also, a clear definition of modality is necessary for understanding the class of linguistic items the model for modal semantics developed in Chapter 6 needs to account for.

The present chapter reviews definitions of modality in the linguistics literature with the goal in mind to carve out a category of modal meaning. Before doing so, two issues need to be addressed. The first one is to clarify on which level of analysis the category of modality is intended to apply. This is done in §3.2.1. As we shall see, modality is not to be understood as a morphosyntactic category, and it is also not quite a semantic category; modal meaning can, like any other meaning, be linguistically encoded or pragmatically inferred. The second issue pertains to the decision to subsume root and epistemic modal meanings into one category. There is an intuitive difference between these two meanings, and many languages discriminate lexically between them (van der Auwera and Ammann, 2013). §3.2.2 therefore provides a discussion of the relation between root

and epistemic modal meaning and why it makes sense to talk about a category of modality which covers both these types of meaning.

Moving on, §3.3 deals with the question of how to define modal meaning, that is, to identify the properties a meaning must have in order to be classified as modal. The section reviews various conceptions of modality figuring in the linguistics literature and concludes that the appropriate definition of modal meaning is ‘unrealized force-dynamic potential’ (see Boye, 2005). This view of modality falls under ‘the narrow conception of modality’ (Boye, 2012b). In §3.4, the definition of modality is employed and used to define a modal expression and to set boundaries between modal meaning and its neighboring meanings, namely evidentiality, full certainty and causativity. §3.5 sums up the chapter. Before we begin, however, a superficial overview of the phenomenon ‘modality’ along with terminological clarification is in order.

3.1.2 The phenomenon

In his contribution to the Encyclopedia of Applied Linguistics, Boye (2012b) distinguishes between the narrow and the broad conception of modality. Modality in the narrowest sense is associated with the modal logic notions of necessity and possibility. If the narrow sense of modality is adopted, modality in English includes expressions like *perhaps* and *possibly* in addition to the modal auxiliaries (e.g. *can*, *must* and *may*). An extended version of the narrow conception includes any expressions of degree of certainty, and some even include expressions of source of information, also known as evidentiality. The even broader conceptions of modality, Boye (2012b) explains, also include meanings like speaker attitude or subjectivity.

This thesis endorses the narrow conception of modality – i.e. the one associated with necessity and possibility – and the present chapter contains argumentations for why this is preferable. It should be noted, though, that the terms ‘necessity’ and ‘possibility’ are not completely in accordance with the conception of and model for modal meaning developed throughout the thesis. The terms will nevertheless occur throughout for the following simple reasons: ‘necessity’ and ‘possibility’ are the most widely used terms in the linguistics literature on modality, and I intend the thesis to be accessible to anyone who is interested in modality or in the Ummarmiutun language regardless of theoretical background. Moreover, in spite of their unsuitability in a

definition of modal meaning and their inaccuracy in semantic and pragmatic representations of modal meaning, ‘necessity’ and ‘possibility’ work just fine as loose short hand terms.

Through the use of modal expressions, speakers describe the necessity or possibility that the situation represented by the linguistic material in the scope of the modal is actualized, as in (3.1), as well as the necessity or possibility that a description is true about the world, as in (3.2):

(3.1) Root modality

a.	You must finish your homework!	Necessity
b.	I am so thirsty, I must have water.	Necessity
c.	I am ready, you may enter.	Possibility
d.	I can swim.	Possibility

(3.2) Epistemic modality

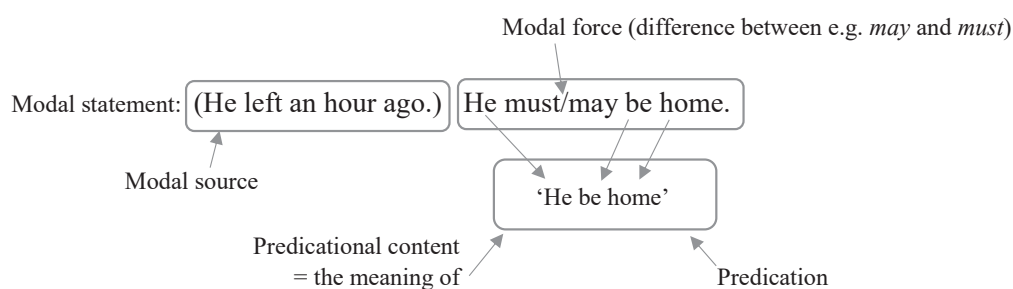
a.	She must have gotten off work by now.	Necessity
b.	He sometimes dislikes costume dramas. He may not like <i>Pride and Prejudice</i> .	Possibility

The sentences in (3.1) all relate the actualization of the denoted event to a set of states of affairs, be they moral circumstances as in (3.1a) and (3.1c) or general physical circumstances as in (3.1b) and (3.1d). In (3.1b), for instance, the actualization of the speaker having water is presented as related to the circumstances that the speaker is thirsty. The examples in (3.2) are different from those in (3.1), in that they concern the probability of the truth of the proposition in the scope of the modal. In (3.2a), for instance, the probability that the subject referent has gotten off work is presented as related to knowledge or observations that have a bearing on whether or not the subject referent has gotten off work at the time of the utterance. I shall use the term ‘root modality’ for the meanings expressed by *must*, *may* and *can* in (3.1) (like e.g. Papafragou (2000) and Eide (2005)), and ‘epistemic modality’ for the meanings expressed by *must* and *may* in (3.2) (like e.g. Öhlschläger (1989), Papafragou (2000) and van der Auwera and Ammann (2013)).³²

³² Throughout the linguistics literature, the semantic space including root necessity and possibility is also referred to as ‘situational modality’ (van der Auwera and Ammann, 2013), ‘agent-oriented modality’ (Bybee et al. 1994) and

What epistemic and root modality have in common is that the modal meaning relates the predicational content in its scope to something (e.g. van der Auwera, 1981: 81; Kratzer, 2012b: 7). In (3.1c), for instance, *may* relates the predicational content ‘you enter’³³ to the state of affairs referred to by the phrase *I am ready*. Following Öhlschläger (1989), I shall use the term ‘modal source’³⁴ to denote the states of affairs or beliefs to which a modal expression relates the predicational content in its scope. Note that the modal source may be represented by linguistic material, as in (3.1b-c) and (3.2b) above, or it may be inferred, as in (3.1a) and (3.2a) above. I will refer to the parameter of necessity and possibility as ‘modal force’. The basic labels involved in the description of a modalized statement in the present thesis are summarized in Figure 3.1:

Figure 3.1: Terms for describing a modalized statement



As for modals and level of scope, several views exist in the literature. On some accounts, modals scope below the proposition (e.g. Nicolle, 1996). Other accounts state that modals take propositions in their scope (e.g. Groefsema, 1995). Today, it is more common to acknowledge that root and epistemic modals take different types of representations in their scope. Boye (2005, 2012a), for instance, argues that epistemic modals scope over propositions while root modals scope over states of affairs rather than propositions, and Papafragou (2000) argues that root modals scope over descriptively used propositions whereas epistemic modals scope over propositions used as

‘event modality’ (Palmer, 2001). The semantic space including possibility and necessity of the truth of the proposition is also known as ‘propositional modality’ (Palmer, 2001) and ‘non-root modality’ (Eide, 2005).

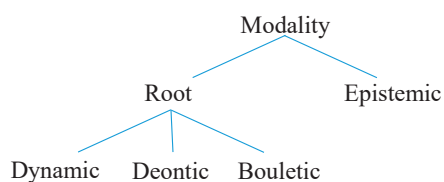
³³ Material inside ‘ ’ refers to meanings. Thus, ‘you enter’ is a short hand description of a predicational content in the same way as ‘probably’ is a short hand indication or reminder of the approximate meaning of *hungnaq*. None of these glosses are to be understood as precise reflections of semantic content or fully fledged representations of meaning.

³⁴ ‘Modal source’ corresponds to ‘Modal Quelle’ in Öhlschläger (1989). This conception of the entity to which the modal relates the predicational content can be traced back to Bech (1951) who uses the term ‘Modalfaktor’.

metarepresentations. In Chapter 6, §6.3.3.2, I shall – following Papafragou (2000) and relevance theory – argue that the representations in the scope of root as well as epistemic modal meaning have propositional form,³⁵ and that the difference between the scope of a root modal and the scope of an epistemic modal pertains to how this propositional representation is used and entertained (see also §6.2.3.3). I shall leave questions pertaining to levels of representation aside for now and focus on the purpose of the present chapter, which is to define a field of meaning which may appropriately be called modal. To do so, we need a label to refer to the meaning over which the modal scopes. This is necessary in order to talk about various modal meanings and their properties. The term ‘predicational content’ will be used to refer to the meaning over which a modal scopes (as illustrated in Figure 3.1 above), unless a given section concerns the discussion of a particular theoretical position which involves the notion of propositions (i.e. formal semantics or relevance theory). The term ‘predicational content’ is applied here as a term which is a) neutral with respect to whether the meaning unit is intended as a description or a metarepresentation and b) neutral with respect to whether the meaning unit picks out a state of affairs or a proposition.

The meaning space of root modality may be further divided into dynamic, deontic and bouletic modality. On the broader conceptions of modality – which is not adopted here – epistemic modality is sometimes sub-divided into evidential modality and epistemic modality. Evidentiality is the linguistic indication of evidence, justification or information source (e.g. Boye, 2012a; Aikhenvald, 2003, 2004). Throughout the thesis, I shall argue against the view (e.g. Palmer, 2001) that evidentiality is a type of modal meaning. Evidentiality is therefore not part of Figure 3.2, which shows how the modal meaning space is usually divided in the linguistics literature:

Figure 3.2: Traditional labels for modal meanings



³⁵ That is, the hearer accesses a set of truth-conditions in that she knows what the world would have to be like in order for this set of conditions to be filled.

Epistemic modality was illustrated in the examples in (3.2) above. The various root modalities are illustrated in (3.3) below. Along with each example sentence is one or more descriptions to specify a meaning conveyed by the modal. It should be noted that the sentences in (3.3) may be used to convey various types of modal meaning, and the only purpose of (3.3) is to provide illustrations – not to analyze utterances.

- (3.3) a. Peter must dance.
 The dancing team expects this: External necessity Deontic
- b. Peter may dance.
 Everybody is ready to watch: External possibility Deontic
- c. Peter wants to dance.
 Peter is eager to dance: Internal necessity³⁶ Bouletic
- d. Peter must move.
 Peter’s house is falling apart: External necessity Dynamic
- e. Peter can dance now.
 He has practiced a lot: Internal possibility Dynamic
 He got a pair dancing shoes: External possibility Dynamic

All the sentences in (3.3) relate the actualization of the situation to a set of states of affairs. In (3.3a), *must* gets a deontic meaning if the modal source is external to Peter and has to do with moral or general social rules or the will of an authority. Also (3.3b) is an example of deontic modality. (3.3c) illustrates bouletic modality. Here the actualization of ‘Peter dance’ is related to something internal to Peter, more specifically his wishes and preferences. (3.3d) illustrates dynamic modality. This label is for modal sources which pertain to practical or physical circumstances, including intellectual properties, rather than desires or social conventions and relations. Dynamic modality is not tied to a certain location of the modal source; in (3.3d), practical circumstances external to Peter affect the actualization of the situation described by the predication, in that the source is the

³⁶ Linguistic evidence that the distinction between bouletic necessity and bouletic possibility is relevant is found in Danish, where *turde* ‘dare’ corresponds to bouletic possibility (Boye, 2001). *Want*, on the other hand, is an expression of bouletic *necessity*; if someone wants something to be actualized, this psychological or emotional force is arguably stronger than cases where the person is merely okay with the actualization.

conditions of the house. (3.3e) also illustrates dynamic possibility. On one interpretation of (3.3e), the circumstances affecting the actualization of ‘Peter dance’ come from within Peter, in the shape of his intellectual and physical capacities. On another interpretation, the circumstances affecting the actualization are located outside Peter, e.g. in the shape of a pair of dancing shoes which makes it practically possible for him to dance (assuming that the type of dance, e.g. tap dance, requires special shoes).

3.2 Approaching modality

3.2.1 Modality and levels of analysis

Modal expressions are worth studying on several levels of analysis. First, they display interesting syntactic properties (e.g. Eide, 2005). Second, they come in several morphological categories, e.g. auxiliary verbs, suffixes, clitics and postbases. In many languages, it turns out that modals share certain morphosyntactic properties (Eide, 2005: 17-24, 53-72), and it thus makes sense to talk about a class of modals based on syntactic criteria. Nevertheless, within the same language, modal meanings may be expressed by members from different morphosyntactic categories. In English, for instance, there is the set of modal expressions which share morphosyntactic properties, granting them the label ‘auxiliary verbs’; e.g. *can*, *must*, *should*. However, English also exhibits modal adverbials like *perhaps* and *possibly* as well as phrases such as *I am almost certain that* and *it is possible that*. If the purpose of the study is to investigate modality as a grammatical category – similar to e.g. Aikhenvald’s (2004) investigation of evidentiality as a grammatical category – phrases like *I am almost certain that* and *it is possible that* would have to be excluded, since they are not members of a grammatical paradigm. We would also have to either exclude the adverbials for being less grammaticalized than the auxiliaries or conclude that English has more than one modality paradigm. It is thus clear that grammatical and semantic-pragmatic notions of modality do not necessarily pick out the same set of expressions. When I look for a suitable definition of modality in the present study, the category of modality is understood as a class of meanings which share certain meaning properties, i.e. modal properties (see also Boye, 2012b: 1; Narrog, 2005:

166).³⁷ For the sake of time and space, the study is limited to Uummarmiutun postbases and a few clitics which express modal meaning, and in this sense, morphosyntactic criteria play a role in limiting the scope of the study. Nevertheless, in order to check if an expression has modal meaning and thereby should be included in the study, a definition of modal meaning without recourse to morphosyntax is in order.

It is important to be aware that like any other aspect of meaning, modal meaning can be either semantically encoded or pragmatically inferred. Let us look at the difference between semantic and pragmatic meaning and see how this relates to the expression of modal meaning. ‘Semantic meaning’ corresponds to conventional meaning, i.e. the meaning aspects that a linguistic expression – be it a suffix, word or phrase – brings to the utterance interpretation every time it is used. The semantics of an expression may roughly be seen as a commoner of all the interpretations it can yield (see Carston, 2006, 2008). To avoid misunderstandings: semantic meaning, the way the notion is used in this thesis, is not the same as truth-conditional meaning. Linguistic expressions may encode meaning that contribute outside the truth-conditions of the utterance (Ariel, 2008, 2010). A linguistic expression may for instance conventionally encode information on speaker attitude. *Honestly* in utterance initial position does not contribute to the truth-conditional content of (3.4), but the meaning it contributes is indeed to be seen as encoded:

(3.4) Honestly, do you really want to meet him?

Any conventional link between an expression and a meaning aspect is encoded and hence semantic, and there seems to be such a conventional link between *honestly* in utterance initial position and a certain speaker attitude. ‘Pragmatic meaning’, on the other hand, is the context-specific meaning that the expressions end up conveying in a specific utterance in a context. Just like semantic meaning should not be conflated with truth-conditional meaning, pragmatic meaning should not be conflated with non-truth-conditional meaning. The task of reference assignment in the interpretation of pronouns, for instance, is highly context dependent, and the result of this process is indeed a contribution to the truth-conditions of the utterance. A pronoun like *she*, for instance, encodes ‘3.SG.femme-presenting.in-focus’, given that this is the meaning conventionally

³⁷ The present definition of a category of modality thus has to do with content substance rather than structure. See e.g. Boye (2010a,b: 32, 2012a: 7-8) for the distinction between substance and structure.

associated with *she*. The referent assignment is context-specific, and hence the representation of the specific referent is a result of pragmatic inference based on the encoded meaning and the context. *She* obviously does not always refer to my mother, though it evokes that representation when it is used in an utterance of a sentence like *My mother called yesterday. She wanted to hear how it's going.*³⁸ Meanings in themselves are independent from the semantic-pragmatic distinction, and any meaning may in principle be conveyed semantically – given that there is an expression in the language that conventionally encodes that meaning – or pragmatically.

Like any other meaning, modal meaning may be part of the utterance interpretation without necessarily being encoded by any of the linguistic expressions in that utterance. Consider the dialogue in (3.5):

(3.5) A: Do you think it's a good idea to go back to college?

B: Mom and Dad will be SO happy if you do, and SO mad if you don't.

Assuming that A and B both believe that B believes that their parents' opinion matters significantly, B can successfully communicate something which could be paraphrased as (3.6) by uttering her sentence in (3.5):

(3.6) A should go back to college.

The modal meaning represented in the rendering of this implicature as *should* is not encoded by the linguistic expressions in B's utterance. The meaning is nevertheless part of the utterance interpretation, because it is part of what the speaker intends to convey by producing that utterance. Successful expression of modal meanings can thus be a result of pragmatic processes based on the utterance and the context as a whole, or it can be a result of using expressions which encode modal meaning. Hence, a definition of modal meaning covers meaning expressed on the semantic as well as the pragmatic level.³⁹

As for the scope of the study, it is important to draw a distinction between modal expressions and the expression of modality. A modal expression will be one which encodes the

³⁸ See also Chapter 6, §6.2, for an outline of relevance theory and the distinction between semantics and pragmatics.

³⁹ See Chapter 6, §6.2.3.2, for details on the phenomenon 'implicature'.

meaning defined as modal meaning. The expression of modality is necessarily broader, in that it covers modal expressions as well as cases like (3.5) above, where modal meaning is communicated without the use of a linguistic item that encodes modal meaning. The present study is concerned with Uumarmiutun modal expressions, not the expression of modality in Uumarmiutun. This means that the scope of the study includes linguistic expressions which contribute to the utterance interpretation with semantically encoded modal meaning.

3.2.2 The relation between root and epistemic modality

The features involved in root and epistemic modality, respectively, have notionally little in common, according to Palmer (2001: 7, 86). While root modality is associated with notions like permissions, abilities and obligations, epistemic modality is associated with the probability that something is true. In spite of these differences among modal meanings, cross-linguistic evidence suggests a relationship between epistemic and root modal meanings. This is seen in the diachronic and synchronic connections between the two fields of meaning. Based on cross-linguistic evidence, Bybee et al. (1994) argue that in many languages, linguistic expressions that encode root modality at one diachronic stage develop epistemic meaning at a later stage (see also van der Auwera and Plungian, 1998). Such changes in meaning arise from metaphoric extension or conventionalization of implicatures, according to Bybee et al. (1994: 196-197). Regardless of whether the development is a process of metaphoric extension or conventionalization of implicature (see Chapter 6, §6.4.4), it seems to rely on language users' recognition of a relation between the original root meaning of the given expression and the later added epistemic meaning. The diachronic development of the modals investigated by Bybee et al. (1994) should therefore be taken as a hint that root and epistemic modality may constitute a notionally coherent category. If speakers may rely on the hearers' ability – more specifically, their pragmatic competence – to associate an encoded root modal concept with a context-specific epistemic modal interpretation, it presupposes an assumed common acknowledgement of a relation between root concepts and epistemic concepts in that speech community. If it happens often enough that the hearer needs to derive an epistemic concept

from the speaker's use of a root modal expression, epistemic meaning will become part of the conventional – i.e. encoded – meaning of that expression.⁴⁰

At the synchronic stage of various languages, we find modal expressions with lexical overlap between root and epistemic modality (van der Auwera and Ammann, 2013). This means that the same phonological form may be used to express both types of modality. An example from German is given in (3.7). Depending on the context, we get a root interpretation – (3.7a) – or an epistemic interpretation – (3.7b) – while the ‘necessity’ meaning is constant on either interpretation (Öhlschläger, 1989):

(3.7) Karl muß morgen kommen.

‘Karl must come tomorrow’

a. Es ist notwendig, daß Karl morgen kommt.

‘It is necessary that Karl comes tomorrow’

b. Ich bin sicher/es ist sicher, daß Karl morgen kommt.

‘I am certain/It is very probable that Karl comes tomorrow’

(Öhlschläger, 1989: 132)⁴¹

Languages in Europe from the Indo-European family display root-epistemic overlap in either the possibility domain, the necessity domain, or in both (van der Auwera and Ammann, 2013). Judging from van der Auwera and Ammann (ibid.), root-epistemic overlap is also found outside Europe,

⁴⁰ Bybee et al. (1994: 198), for instance, report on a Middle English text, *Sir Gaiwan and the Green Knight*, where “[...] may is used to express root possibility in a context in which epistemic possibility is also implied”:

ȝe ar a sleeper ynslyȝe, þat mon may slyde hider

‘You are so unwary a sleeper that someone can sneak in here’ (Bybee et al. 1994: 198)

As Bybee et al. (ibid.) write, *may* is here translated into present day English with *can* to convey the root meaning. Nevertheless, this root possibility reading implies the epistemic reading, i.e. ‘someone can sneak in here’ implies that ‘someone may sneak in here’ in the given context (ibid.). Bybee et al. (1994) report that one third of the examples with *may* in *Sir Gaiwan and the Green Knight* may be interpreted as either root or epistemic possibility, whereas the remaining two thirds are unambiguously root. The frequency of such cases in this one text “[...] suggests that the inferential mechanism is highly likely to be involved in this case of a shift to epistemic meaning” (ibid.: 198). The reader is referred to the study by Bybee et al. (1994) of the diachronic semantics of modal expressions in particular, and to Falkum (2015) and Ariel (2008, 2010) for theoretical accounts of how pragmatic mechanisms are involved in semantic change. See also Chapter 6, §6.4.4.2-3, in the present thesis.

⁴¹ My own translations.

though not in the same concentration. Examples of non-Indo-European languages with overlap in the necessity and possibility domains are West Greenlandic (Fortescue, 1984), Tuvan (Anderson and Harrison, 1999), Mandarin (Li and Thompson, 1981), Egyptian Arabic (Gary and Gamal-Eldin, 1982; Mitchell and Al-Hassan, 1994).⁴²

It is important to note, however, that root-epistemic overlap by no means is a universal phenomenon; many languages of the world display no lexical root-epistemic overlap. Languages with non-overlapping modals are especially common in the Americas and in Papua New Guinea (van der Auwera and Ammann, 2013). As will be confirmed in Chapter 5 and 7, also Uumarmiutun modals are non-overlapping. If so many languages of the world have separate lexical forms for root and epistemic modality, why assume a category that consists of these two meaning domains? The view of root and epistemic meaning as constituents of a category could seem to be a heritage from the fact that theoretical linguistics have worked extensively on (Germanic) languages with root-epistemic overlap. It is reasonable to assume that this heritage has affected the study of modal expressions in other languages of the world.

When the present study works with a category of modality which contains root and epistemic modal meaning, it is important to keep in mind that this does not entail the assumption that the category is *structurally* relevant to all languages of the world. That is, the thesis obviously does not presume that all languages structure the modal meaning space lexically in the same way. The category of modality is employed as a cross-linguistic descriptive category. As such, it is a purely theoretical construct, which is a notional generalization over distinct but related linguistic meanings. A cross-linguistic descriptive category is used for groups of related values and for cross-linguistic generalization. Such cross-linguistic generic categories have descriptive significance only, and they are not claimed or believed to have any explanatory power (Boye, 2010b: 31, 2012a: 10-11) in and of themselves. This does not mean that the recognition and operationalization of a category of modality subsuming root as well as epistemic modality is random. First of all, the category of modality is notionally coherent. Secondly, the singling out of a category of modality – in the present thesis and throughout the linguistics literature – is founded on the observation that many languages do appreciate a conceptual link between root and epistemic modal meanings, as reflected in the diachronic and synchronic realities reported by Bybee et al. (1994) and van der

⁴² See map for Feature 76A in van der Auwera and Ammann (2013).

Auwera and Ammann (2013). Given the cross-linguistic tendency of exploiting the conceptual link between root and epistemic modal meaning, as well as the notional coherence of these two types of meaning, the category modality is – like other well-founded notional meaning generalizations – likely to be significant for [...] *the description of cross-linguistic patterns pertaining to meaning change, polyfunctionality, morpheme ordering and scope properties* (Boye, 2012a: 10).

The category of modality in the present study will serve as a basis for forming hypotheses for empirical testing as well as for interpreting the results. The very awareness of which meanings modal items in other languages cover is useful for the purpose of forming hypotheses about which meanings are covered by the Uumarmiutun modals under investigation. For example: because many languages of the world have linguistic items which are polyfunctional between root and epistemic modal meaning, the study of an apparently epistemic modal expression in Uumarmiutun – e.g. *hungnaq* ‘probably’ (Lowe, 1984: 105) – should seek to determine whether this expression is indeed limited to epistemic modal meaning, or whether it is also suitable for expressing root modal meaning. Working with a category of modality which subsumes root as well as epistemic modal meaning thus aids the identification of meanings that are relevant to check for the expressions under investigation. In addition to guiding the choice of which meanings should be tested for the various expressions, working with a unitary category of modality aids cross-linguistic comparison. When we collect a “[...] *set of linguistic expressions from different languages that have meanings over which a generalization can be made in terms of a particular notion*” (Boye, 2010b: 32), this allows us to look into how human languages differ in the way they carve up a conceptual space and label the parts. As for the present study, it turns out that Uumarmiutun has no lexical root-epistemic overlap.⁴³ Since other languages of the world, like English and Norwegian, do have overlap, we have gained an insight into how different languages carve up a given conceptual space lexically. When it comes to avoiding possible pitfalls inherited from the linguistics literature’s preoccupation with root-epistemic overlapping modals, the important thing is to make sure that the framework used for phrasing the semantic proposals is tailored to appropriately reflect the semantic and pragmatic properties of non-overlapping modals as well as

⁴³ Some of the Uumarmiutun root modals under investigation may though be used in utterances conveying epistemic interpretations. These expressions are nevertheless not appropriately analyzed as lexically encoding epistemic meaning. See Chapter 5, §5.3.1 and §5.3.4, and Chapter 7, §7.2 and §7.5.

overlapping ones. That will be the topic of Chapter 6. For now, let us return to the purpose of the present chapter, which is to define what modal meaning is.

3.3 Conceptions of modality

3.3.1 Subjectivity

The term ‘subjectivity’ in linguistic accounts of modality is understood as speaker attitude (Lyons, 1968) or as involvement of the speaker (Palmer, 1986). Lyons (1968: 308) describes modality as well as mood as grammatical marking of speaker attitude, and Palmer (1986) writes that all modals share an aspect of involvement of the speaker (*ibid.*: 96). However, a definition of modality in such terms is unfortunate because it excludes root modality from the category.

That root meanings are unrelated to the expression of speaker attitude is fairly obvious. The utterance of (3.8) below, for instance, does not necessarily offer any cues regarding the speaker’s own evaluation of or attitude towards the situation:

(3.8) Peter must pay a 100 dollar fine – he got a parking ticket yesterday.

The speaker of (3.8) may of course provide cues on her subjective attitude towards the situation described e.g. via a mocking tone or rolling eyes. But there is nothing in the linguistic code in (3.8) providing such information. We could, though, say that the speaker of (3.8) is involved because it is her interpretation of the world, but this does not account for any salient aspects of the meaning contributed by *must*.

Sometimes root modal meaning is indeed connected to speaker involvement, but those instances are better described as performative use of the modal:

(3.9) a. You must give her the pen back.
b. You can enter now.

In (3.9a) the speaker issues a command to the hearer, and in (3.9b) she grants him permission. It is possible to imagine a context for (3.9a) where the speaker is a teacher who presents to a pupil the

necessity that he returns the pen to its owner as based on the teacher's authority over him. And in (3.9b), it is possible to imagine a context where the speaker presents the actualization of the situation as possible in relation to her authority to decide who can enter her office when. In both cases, the speaker is involved in that she is part of the circumstances from which the necessity in (3.9a) and the possibility in (3.9b) emerge. However, at a closer look, it is clear that if the sentences in (3.9) include an aspect of speaker involvement, this is part of the context-specific interpretations of the sentences rather than the use of *must* and *can* in and of themselves (for similar observations see e.g. Lyons, 1977). Compare with (3.10a-b) below:

- (3.10)** a. You must give her the pen back. She is bigger than you, and she is very angry.
b. The other client has left. You can enter now, if you like.

In (3.10a-b), the speaker is not involved in the permission or the command; it is clear from the respective linguistic contexts that she is merely reporting on the necessity or possibility of the actualization of the situations in relation to sets of circumstances in which she is not included (see Boye, 2001: 23-24, for similar arguments). In the examples in (3.11), it is even harder to see how the speaker can be said to express or refer to her involvement by using *can* and *want*:

- (3.11)** a. John can swim.
b. Peter wants ice cream.

As the examples illustrate, it is not the modal meaning properties which necessarily involve the notion of speaker involvement. A speaker may well report on someone's ability, permission or obligation without necessarily referring to her own involvement or evaluation.

It is possible to argue, of course, that the speaker expresses her attitude whenever she assesses the possibility or necessity of the actualization of a situation or assesses the probability of whether it is true. If that is how we should understand the term 'subjectivity' or 'speaker attitude' or 'speaker involvement', we may say that the speaker, by uttering e.g. (3.10a), makes a reference to her own acknowledgment of the connection between the actualization of 'you give her the pen back' and the state of affairs that 'she is big and angry'. In that case, however, we would have to say that expressions like *because* convey modal meaning, in that *because* conveys that the speaker

perceives a link between different states of affairs. Such an extension would result in a category so broad that it would be hard to say anything interesting about its members.

Alternatively, we could say that subjectivity is not a defining property of modal meaning, and rather say that the category of modality includes any expression pertaining to the speaker's subjective attitude. This would, however, force the inclusion of expressions like *hopefully*, *I am sad* and *I am glad* (Boye, 2012b), and pose a new problem: which properties do the meanings conveyed by expressions like *hopefully*, *I am sad*, and *I am glad* have in common with root meanings? It is, after all, even more difficult to find a semantic or conceptual commonality between root modals and such meanings than between root modal meanings and epistemic modal meanings. To conclude, subjectivity is sometimes involved in the interpretation of some modal expressions, but modality in general cannot be fruitfully defined in terms of subjectivity.

3.3.2 Undetermined factuality

According to Narrog (2009), modal meanings have in common that they mark the state of affairs as non-factual (ibid.: 8), and Narrog (2005) proposes that modality can be neatly and coherently defined in terms of 'factuality'. In his definition of modality, he writes that "[t]he expression of a state of affairs is modalized if it is marked for being undetermined with respect to its factual status, i.e. is neither positively nor negatively factual" (ibid.: 184). From this it follows that modal meaning can be characterized as factual indeterminacy. The concept of undetermined factuality seems fairly applicable to most of the meanings we know as modal. Uttering e.g. (3.9a) or (3.10a) does not communicate whether or not 'you give her the pen back' is actually going to happen. And likewise, uttering sentences like (3.3a) or (3.3c) above do not communicate whether or not 'Peter dancing' is taking place. In all those sentences, the state of affairs is presented as not belonging on either of the factuality poles.

Non-factuality and undetermined factuality indeed apply to root meanings and epistemic modal meanings alike, and hence these concepts are the most suitable candidates of the ones discussed so far in this chapter for defining modality. However, while undetermined factuality does constitute a salient part of the informative intention behind utterances with epistemic modal meaning, this does not seem to be the case for all utterances with root modal meaning. In (3.12a)

below, the expression *can* is used to convey dynamic possibility, and in (3.12b), *must* is used to convey deontic or dynamic necessity:

- (3.12) a. I have studied for many year, and now I can speak Italian.
b. He is confused. You must tell him what to do.

None of the sentences in (3.12) determine the state of affairs with respect to factuality. (3.12a) remains silent with respect to whether or not the subject referent actually walks around and speaks Italian, and (3.12b) does not convey whether or not the referent of *you* actually ends up telling the referent of *him* what to do. Nevertheless, non-factuality is hardly a very important part of the intention to use *can* or *must* in those sentences. (3.12a) is rather about a potential of the speaker given the set of skills she has acquired, and (3.12b) is about an obligation or a practical necessity given that the hearer has knowledge which is ideally also possessed by the referent of *him*. It is not false that the linguistic material in the scope of root modal meaning is undetermined with respect to factuality, but the question is whether this characteristic reflects anything about the salient properties of root modal meaning. Narrog (2009) notes this himself, and concludes that deontic modality is thus less typical or less central to a concept of modality based on non-factuality (ibid.: 11-12). The question is whether we are content with a definition of modality that renders root modal concepts less typical than the epistemic modal concepts, especially now that we have seen that epistemic meanings are often the results of extensions or semantic change from root-only expressions (Bybee et al. 1994; van der Auwera and Plungian, 1998).

3.3.3 Necessity and possibility and the inheritance from modal logic

The concepts of necessity and possibility derive from modal logic in the discipline of philosophy. Other similar dichotomies inherited from formal logic, which are often applied in linguistic studies of modality, are existential and universal quantification over possible worlds (Kratzer, 1981, 2012). Also Papafragou (2000: 40) employs formal logical notions, namely logical relations of entailment and compatibility. Necessity and possibility as well as entailment and compatibility are similar to

universal and existential quantification in terms of how they interact with negation (see Lyons, 1977):

(3.13) Necessity and possibility in interaction with negation

- a. $\text{Nec}(p) = \sim \text{Poss } \sim p$
- b. $\text{Poss}(p) = \sim \text{Nec } \sim p$ (Lyons, 1977: 787)

p = proposition

- (a) reads: p is necessary = it is not possible that not p
- (b) reads: it is possible that p = it is not necessary that not p

(3.14) Universal and existential quantification in interaction with negation

- a. $\forall x : P(x) = \sim \exists x : \sim P(x)$
- b. $\exists x : P(x) = \sim \forall x : \sim P(x)$ (Lyons, 1977: 787)

P = predication

- (a) reads: For all X it goes that X is P = there is no X such that X is not P
- (b) reads: There is at least one X which is P = not all X are not P

As Boye (2012b) notes, there seems to be agreement among scholars that modality in linguistics has to do with the linguistic expression of necessity and possibility, and van der Auwera and Plungian (1998: 80) even define modality as the semantic domains that involve necessity and possibility as paradigmatic variants. Other works where the notion of necessity and possibility is clearly present in the understanding of modality are von Stechow (2006), van der Auwera and Ammann (2013), Kratzer (1981, 2012), Hacquard (2011) and Lyons (1977). The use of the concepts ‘necessity’ and ‘possibility’ has been taken for granted so far in the chapter. It is nevertheless not given that such notions are a) suitable in a definition of modal meaning, and b) useful in an accurate account of the semantics and pragmatics of individual modal expressions.

In the present section, I shall discuss the suitability of necessity and possibility in a definition of modal meaning. In doing so, I shall discuss the problems related to the use of necessity and entailment to capture certain linguistic meanings, as this is where the inheritance from modal logic is most unfortunate, in my view. Possibility and the related notion of compatibility may

indeed capture linguistic meanings, but if necessity – and the related notion of entailment – turn out to be inadequate, this is sufficient to question the suitability of the dichotomy of necessity and possibility as a whole in the encounter with linguistic meaning, and hence also the suitability of these notions in a definition of the linguistic phenomenon modality. Moreover, as the reader will notice, I restrict myself to discussing problems with the notion of *epistemic* necessity. Nevertheless, if the notion of necessity fails to be applicable to the linguistic expression of epistemic concepts, this is, in my view, sufficient for questioning the suitability of necessity altogether. The main argument for not using necessity and possibility to define modal meaning in the present study is that the philosophical notion of modal necessity does not match the linguistic expression of epistemic modal necessity to the extent that it has a suitable place in the definition of linguistic modal meaning in general.

An obstacle to the use of logical necessity in connection with linguistic modal meaning is that logical necessity works as follows: if ‘necessarily p’ is true, then ‘p’ is true. As we shall see in due course, this property of logical necessity does not appear to resonate with the linguistic expressions of epistemic necessity (see von Fintel and Gillies, 2010; Matthewson, 2015, for the opposite view). As shown in (3.13), necessity and possibility are defined in terms of each other, and the problem is that if ‘necessarily p’ is the same as ‘it is not possible that ~p’, then the truth of ‘necessarily p’ clearly entails that p is true. Stating that expressions like *must* express necessity in this philosophical logical sense will yield false predictions regarding the epistemic stance expressed by the speaker of (3.15) below. That is, if *must* expresses logical necessity, then (3.15a) would be as strong as (3.15b):

- (3.15) a. John must be home.
b. John is home.

It should be noted that some scholars who work on modality – e.g. von Fintel and Gillies (2010) – argue that statements with epistemic *must* are in fact stronger than the corresponding non-modal statements. On their account, *must* does not encode uncertainty, but rather that the speaker draws a confident inference (see e.g. Boye, 2012a: 156-158; Goodhue, 2016, and the present chapter for counter arguments). Von Fintel and Gillies (2010) moreover argue that *must* – and in fact all epistemic modals – carry an “evidential signal” by which the speaker conveys that she lacks direct

observation of evidence that could directly settle the truth of the proposition. The claimed properties of *must* as an expression of full epistemic certainty do not prevent von Fintel and Gillies (2010) from viewing *must* as a modal expression, and to them, the entailment properties of philosophical logical necessity are therefore not a problem when applied to natural language; *must* is a necessity modal, and sentences of the form *must(p)* do entail the truth of *p* (ibid.). Also Matthewson (2015), referring to works by Martina Faller, discusses an expression in Cusco Quechua which renders the proposition true and falls within Matthewson's (2015) category of modality. While von Fintel and Gillies (2010) could be right that *must* is sometimes used to convey certainty, this is hardly always the case, and hence I do not endorse their position that *must* is always strong.

Let us say that the speaker of (3.15a) utters this sentence to her friend on the phone after she sees that the lights are on in John's house, his car is in the driveway and she hears loud music coming from his house. If we assume that the speaker perceives her set of experiences as true, and *must* indicates that the truth of 'John being home' follows necessarily from those experiences, then 'John being home' follows necessarily from something true. This entails that 'John being home' is true, and (3.15a) thus comes out as epistemically equivalent to (3.15b). In the same fashion, if *must* is understood as expressing a logical relation of entailment (as Papafragou (2000) proposes), then the utterance of (3.15a) would be epistemically as strong as (3.15b), because 'John being home' is entailed by something the speaker holds to be true, i.e. that the lights are burning, the car is in the driveway and loud music can be heard from the house. This is not in line with most uses of epistemic *must*: as Lyons (1977: 789, 808) acknowledges, drawing inferences is clearly connected to logical necessity, but the linguistic expression *must* is rarely used in everyday discourse to convey logical necessity such that the truth of the description in its scope is presented as entailed from something true and thereby is true itself (see also Kratzer, 1991, and Papafragou, 2000). What we do find in language is that expressions like *must* are used in sentences like (3.15a) to express that the speaker confidently infers that John is home *without committing fully* to the claim that he is (Lyons, 1977: 791).

In sum, the philosophical concept of modal necessity is not directly applicable to linguistic modal meaning. A definition of modal meaning as expressions of necessity and possibility faces problems because the logical system surrounding the philosophical notion of necessity yields false predictions about linguistic expressions of epistemic so-called necessity. I currently see three

solutions to the problem of the mismatch between the original philosophical logic sense of necessity and linguistic realities: 1) distinguish between different types of necessities and specify which ones pertain to linguistic meaning, 2) introduce the Kratzerian function ‘ordering source’ into the logical system, or 3) choose a different set of notions that match linguistic realities better and use them in the definition of modality. Options one and two are discussed and rejected in turn below, in favor of option three which is presented in §3.3.4.

Types of necessity

Lyons (1977) acknowledges that natural language is different from philosophical logic and makes a distinction between logical necessity and possibility on the one hand and epistemic and deontic necessity and possibility on the other. He states that even though the notion of logical necessity does not apply to all modal meanings, it may be used in descriptive semantics (Lyons, 1977: 789). That is, the inferences we refer to with expressions like *must* and *should* may be captured through notions related to logical necessity, according to Lyons (1977). I shall nevertheless argue in this section that the concept of necessity is not suitable in a definition of modality, because logical necessity is too different from the meanings expressed by linguistic modal expressions.

Lyons (1997: 791) draws a distinction between the modal logic concept of alethic necessity on the one hand, and epistemic necessity on the other.⁴⁴ Alethic necessary truths are those propositions which are true in all logically possible worlds (ibid.). Alethic modal necessity thus corresponds to logical necessity in (3.13a) above. As von Stechow (2006: 2) notes, it is difficult to find convincing examples of alethic modality in natural language. (3.16) below is my attempt to exemplify the linguistic rendering of alethic necessity:

(3.16) All unmarried males must be bachelors.

Epistemic necessity is what is involved in confident inferences (see ibid.). Necessity also comes as deontic necessity, and thus, according to Lyons (1977), we get the following types of necessity and possibility: alethic, epistemic and deontic. On this approach, *John must be home* in (3.15a) would

⁴⁴ Alethic necessity has a possibility counterpart; all alethically possible propositions are those which are true in at least one logically possible world, i.e. they are not necessarily false. I shall only discuss necessity here, as the problems associated with logical and alethic necessity are enough to question the duo ‘possibility and necessity’ as a whole.

be a case of epistemic necessity, which is not as strong as alethic necessity.⁴⁵ This leaves us with the following remaining problems. First, it is questionable whether alethic necessity is in fact linguistically real, and therefore we might need to specify the definition of linguistic modal meaning such that it excludes alethic modality. And second, the problem of entailment still persists, given that the use of *must* in sentences like *John must be home* in (3.15a) hardly is intended to express that the truth of *p* is entailed or confidently inferred from the speaker's observations of and hence beliefs that the lights are on, the truck is in the driveway and there is loud music.

As for the linguistic reality of alethic necessity, the problem is that the speaker who utters (3.16) hardly uses *must* to show that the proposition is true in all logically possible worlds. If the intention is to communicate that the proposition is true, the speaker might rather use (3.17):

(3.17) All unmarried males are bachelors.

The use of *must* in (3.16) thus appears to mark an inference similar to the inference marked by *must* in (3.15a). According to Lyons (1977), there is however a linguistically real phenomenon, which comes close to alethic modality, namely objective epistemic modality. If linguistic modal expressions do reflect objective epistemic modality and this phenomenon comes close enough to the original philosophical logic sense of necessity, a definition of linguistic modality in terms of necessity and possibility may be justified. However, it seems to me, as I shall argue in due course, that Lyons' (ibid.) objective epistemic necessity in fact does not apply to most epistemic interpretations of *must*. Let us take a closer look at Lyons' (1977) distinction between subjective and objective epistemic necessity.

On Lyons' (1977) account, a statement is subjectively epistemically modalized when it conveys the speaker's subjective qualifying commitment to the probability of the truth of the

⁴⁵ For the sake of clarity, the table here shows the categorical relationship between alethic and epistemic necessity and possibility as described by Lyons (1977). The difference between Lyons' (ibid.) 'objective' and 'subjective' epistemicity will be addressed later.

		Necessity	Possibility
Alethic		p is true in all possible worlds	p is not necessarily false, i.e. p is true in at least one logically possible world
Epistemic	Objective	objective probability that p is true	objective possibility that p is true
	Subjective	I confidently infer that p is true	I think that p could be true

proposition in terms of her own uncertainty (ibid.: 797-798), as in the utterance of (3.15a) in the scenario discussed above. Objectively epistemically modalized statements present the probability of the truth of the proposition as an objective fact, and this is the reading we would get in (3.18) below:

(3.18)

Context: Alfred is a member of a community of ninety people. Thirty of these are unmarried. We have checked the marital status of all the community members except Alfred, and found twenty-nine unmarried community members.

Utterance: Alfred must be unmarried

I do not believe that we need a distinction between objective and subjective epistemic modality to account for the difference between *must* in (3.15a) and (3.18), as the difference between the two does not lie in *must*. For convenience, the two sentences with their respective contexts are rendered as (3.19a-b) below:

(3.19)

- a. Alfred is a member of a community of ninety people. Thirty of these are unmarried. We have checked the marital status of all the community members except Alfred, and found twenty-nine unmarried community members. He must be unmarried.
- b. The lights are on and the car is in the driveway. John must be home.

The speakers of (3.19a) and (3.19b) both make a reference to an experience or a piece of knowledge, and it therefore appears to be the same cognitive process – namely inference – which is linguistically represented by the use of *must* in both utterances. The difference between (3.19a) and (3.19b) is not to be conceived of in terms of the kind of necessity relation, but rather in terms of the interaction between the modal source and the modalized predicational content. When the proposition representing Alfred’s marital status comes out as objectively true in (3.19a), it is because of the nature of the premise in relation to the predicational content. Burning lights and cars in driveways, as in (3.19b), are, on the other hand, not guaranteed to correlate with ‘John being home’.

In fact, instead of viewing cases like (3.19a) as a type of ‘objective-epistemic modal necessity’ similar to alethic necessity, it seems more adequate to describe (3.19a) as an instance of

non-subjective epistemic meaning, in that everybody would probably draw the same inference when faced with the given evidence. Such non-subjectivity has nothing to do with the properties or the strength of the inference encoded by *must*, but rather with the presumably more widespread acceptance of the relationship between the evidence and the conclusion in cases like (3.19a). In other words, *must* contributes with epistemic modal meaning of equal strength in (3.19a) and (3.19b), but the former appears epistemically stronger because of the nature of the evidence. This evidential aspect of cases like (3.19a) seems related to what Nuyts (2001b) calls ‘intersubjectivity’, which is an evidential notion rather than a type of epistemic modality. Intersubjectivity, Nuyts (2001b: 393) writes, involves the “[...] indication that the evidence is known to (or accessible by) a larger group of people who share the same conclusion based on it” and the speaker “[...] assumes a shared responsibility among those who have access to the evidence and accept the conclusions from it (including him/herself)”. The speaker of *He must be unmarried* in (3.19a) may indeed succeed in conveying a notion of intersubjectivity, because the knowledge of the results from counting the community members will indeed be accepted by most people as leading to the conclusion that Alfred is unmarried. The speaker would however need to describe the whole context, i.e. reveal the evidence and thereby give access to it, in order to express intersubjectivity. Whether or not we get an intersubjective interpretation of a statement with *must* thus depends on the evidence, and hence pertains to evidentiality rather than different kinds of epistemic necessity. Similarly, a speaker may attribute the inference represented by an expression like *must* to a third party, e.g. as in *Bob believes that Peter must be home*. This is another case of non-subjective meaning. The meaning contributed by *must* nevertheless remains the same as in (3.19a-b). The difference between (3.19a-b) and *Bob believes that Peter must be home* is that *Bob believes* indicates that the speaker attributes the content of the modal statement to a set of individuals which does not include her. In this sense, epistemic necessity can be subjective, intersubjective and externally attributed. But this should not, in my view, lead to the recognition of different types of modality, when the difference is better explained as pertaining to evidentiality or attribution.

Following the argumentation above, a definition of modality based on types of necessity and possibility is dispreferred in the present study. The reason is that the notion of necessity does not apply accurately enough in the encounter with linguistic meanings like those conveyed by *must* on epistemic interpretations. Alethic necessity does not apply to linguistic modal meanings, and linguistic manifestations of Lyons’ (1977) objective epistemic necessity, which is the type of

necessity that comes closest to the original philosophical notion of necessity, are better understood as context-specific evidential properties than as properties of the modal relation expressed by the modal in question. The original philosophical logic concept of necessity thereby seems less suitable in a definition of modality, because it covers types of necessity which are not reflected by the linguistic expressions we wish to call modal. In other words, the notion of necessity would need to be modified considerably before it makes sense to base a definition of linguistic modal meaning on necessity and possibility.

Ordering source

Another solution to the mismatch between logical necessity and linguistic expressions of so-called necessity is to include the notion of ‘ordering source’. On possible worlds accounts (see Kratzer, 1981, 1991, 2012), the ordering source is a function which is part of the semantics of modals. The other parts of the modal semantics are a modal base and a universal or existential quantification over possible worlds in the modal base (Kratzer, 1981, 1991, 2012). What happens without the ordering source is similar to what happens if we conceive of *must* as an expression of logical necessity; the modal base in combination with universal quantification alone will make false predictions regarding the communicated epistemic status of the proposition. Let us imagine a context where a speaker utters (3.20) to her friend on the phone after she walks by Peter’s house and sees that the lights are on and his car is in the driveway:

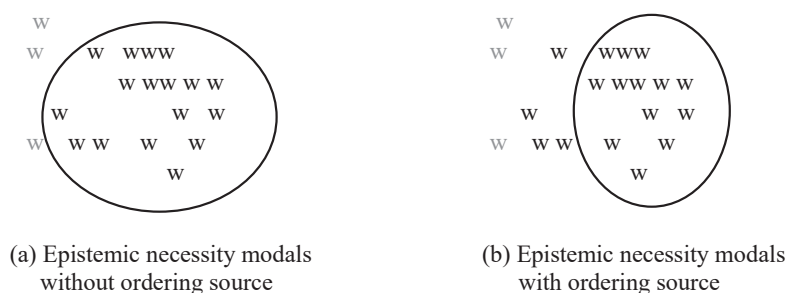
(3.20) Peter must be home.

On Kratzer’s account, *must* quantifies universally over the possible worlds in the modal base, and the modal base is filled by possible worlds which are epistemically accessible from the world of the utterance. That is, epistemically modalized statements are relative to what we know in this world, and thus the speaker bases her statement on something she knows, namely that q ‘the lights are on’ and r ‘the car is in the driveway’.⁴⁶ *Must* in (3.20) conveys that the proposition ‘Peter be

⁴⁶ For the point made here, it is not important whether or not q and r are overtly expressed by the speaker. Regardless of whether or not the modal restriction is overtly expressed, the speaker communicates with an epistemic modal that the propositions constituting the modal base – or in Kratzer’s (2012) terminology, the sets of propositions assigned to the possible worlds which go in the modal base – are something she entertains as true.

home' is true in all the possible worlds where q and r are also true. The problem is that the speaker knows that q and r are true of our world, and when she says that p is true in all the possible words where q and r are true – i.e. in all epistemically accessible worlds – then p comes out as true in our world, as in Figure (3.3a). The ordering source can prevent this false prediction, because it allows that not *all* epistemically accessible worlds are included in the modal base, as illustrated in Figure (3.3b). All the black 'w's in Figure (3.3) represent epistemically accessible possible worlds.

Figure 3.3: Epistemic necessity with and without ordering source



Epistemic conversational backgrounds take a 'stereotypical' ordering source (Kratzer, 1981, 2012). Thanks to such an ordering source, only the epistemically accessible possible worlds, which follow a normal course of events, are included in the modal base. Assuming a stereotypical ordering source for epistemic *must*, (3.20) means that p is true in all the possible worlds where q and r are true *and* a normal course of events is followed. The modal base – over which *must* quantifies – does thereby not include possible world where people (like Peter) go for a walk and forget to turn off the lights. That world is one of the black w's outside the circle in Figure 3.3b, and it is placed there by the ordering source. All the black w's are epistemically accessible from the world of the utterance, and the world of the utterance could be any of the black w's, as we do not know whether *our* world is among the worlds where things have followed the stereotypical course of events. In this way, the speaker has merely claimed that based on what she knows about the world, it necessarily follows that Peter is home, unless things divert from the stereotypical course of events.⁴⁷

⁴⁷ Ordering sources also play an important role in e.g. deontic modal meaning; we need an ordering source in the account of deontic modal meanings to avoid a modal base which is logically inconsistent (e.g. Kratzer, 2012). I only treat the role of ordering source in relation to epistemic modality here, since the linguistic facts concerning epistemic modality are enough to problematize a definition based on traditional logic.

A possible worlds framework including the notion of ordering source allows us to capture modal meaning through the notion of quantification, and given that necessity and possibility correspond to universal and existential quantification (recall (3.13) and (3.14)), there seems to be a place for philosophical necessity and possibility in the account for modality without the risk of false predictions. However, this suggests the adoption of a logical framework of functions, sets and ontologically questionable possible worlds in the account of the semantics and pragmatics of modal expressions. As stated in the introduction, the present study is aimed at providing an account of the semantic and pragmatic properties of Uummarmiutun modals in a cognitive plausible framework, and this is not immediately compatible with a definition of the object of study in terms of functions, sets and possible worlds. This is not a criticism of formal frameworks, but rather an acknowledgment of the different Erkenntnisinteressen of formal semantics studies and the present study, respectively. I do agree with possible worlds semanticists like Hacquard (2011) and Kratzer (1991) that an expression E is modal if a statement of the form $E(p)$ is only true relative to a conversational background f , where p is true in *all* or *some* of the worlds in which the propositions of the conversational background are true. That is, I believe it matches the meaning of modal expressions, and I have no doubt that possible worlds semantics can capture linguistic meaning. Moreover, possible worlds semantics indeed allows for descriptions of the semantic and pragmatic differences between overlapping modals, such as English *may* and *must*, as well as non-overlapping modals which do not restrict the strength of modal force lexically.⁴⁸ The concern is that possible worlds, quantifications and functions do not integrate well in a cognitively plausible description of interpretation processes. The present study intends to phrase the account of Uummarmiutun modals within a semantic and pragmatic framework which is cognitively plausible in the sense that there

⁴⁸ Gitksan (Tsimshianic) sentences with *ima* may be translated into English sentences containing *might*, *must*, *perhaps*, *maybe*, and *likely* (Peterson, 2010). In Peterson (ibid.), *ima* receives the following formal analysis: *ima* has a default existential reading, and it is the contextual determination of the ordering source as either empty or non-empty which determines the modal force of *ima*. The combination of the encoded existential quantification with a non-empty ordering source will strengthen the modal force. If the ordering source is empty, *all* epistemically accessible worlds will be included in the modal base. This gives us a very large set of possible worlds, and the claim that p is true in at least one of these very many worlds thus indicate low certainty. If the ordering source is filled, the set of possible worlds is smaller. Even if p is only true in one of these worlds, p is still true in a larger percentage of the worlds than if p is true in one among a larger – infinite – set of worlds. The opposite pattern is true for universal quantification. As we saw earlier, the epistemic status increases if we have a universal quantifier and a modal base containing all epistemically accessible worlds. If we fill the ordering source, there is room for imagining an epistemically accessible world where the modal base is true while the modalized proposition is false.

should be a link between the proposed denotation and how utterances with these expressions are interpreted.

3.3.4 Modality as unrealized force-dynamic potential

The borrowing of the notion of force dynamics from the natural sciences into linguistics can be traced to a conference presentation by Talmy in 1981, referred to in Talmy's (1988) paper. Sweetser (1984) traces the employment of the notion of force dynamics in linguistics to Talmy in the early 1980s, where he suggested that the semantics of root modality is best understood in terms of force dynamics, i.e. in terms of linguistic treatments of forces and barriers in general (Sweetser, 1984: 60). Sweetser (1984, 1990) builds on Talmy's ideas and shows how the notion of force dynamics can be extended from the domain of root modal meaning and successfully capture epistemic modal meaning as well. In his (1988) paper, Talmy points out a semantic category of force-dynamics and uses various force-dynamic distinctions to analyze linguistic expressions of notions like causation, letting and helping. Also modality falls within Talmy's (1988) semantic category of force dynamics, and the paper proposes that force dynamic oppositions lie at the core of the meaning of modal expressions (*ibid.*: 77). Later on, Boye (2005) builds on Talmy (1988) and Sweetser (1990) and proposes a definition of the domain of modal meaning through the concept of unrealized force-dynamic potential.

Boye (2005) starts out by carving out the meaning domain he intends to define among neighboring meanings. As Boye (*ibid.*) notes, the term 'modality' has been used with various broad extensions in the linguistics literature, where it sometimes covers meaning domains such as mood, speaker attitude and subjectivity. As we shall see, Boye's (*ibid.*) definition of modality excludes meaning domains like evidentiality and causativity.⁴⁹ The domain to be defined in Boye (2005) is thus modality in the narrowest sense (Boye, 2012b). As for the present purpose, Boye (2005) will be used to improve the understanding of the nature of modal meaning, which further allows us to identify a meaning domain as 'modality' and then set the boundaries between modal meaning and non-modal meanings. This provides a theoretically motivated way of delimiting the set of expressions under investigation in an analysis of modal expressions in Uummarmiutun.

⁴⁹ The reader is referred to Boye (*ibid.*: 50-55) for arguments that it is linguistically reasonable to separate a domain of meaning to be called 'modality' from mood.

Boye (2005) requires that a defining concept used to define the category of modality should at least:

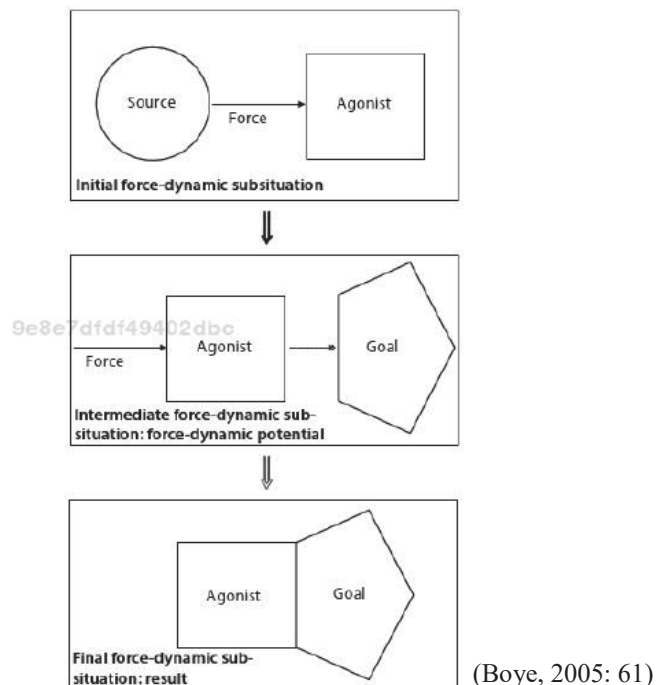
(3.21)

- i) be capable of functioning as a common conceptual meanings denominator of the content units of necessity and possibility;
- ii) make possible an account of the meaning difference between epistemic and non-epistemic modality; and, at best
- iii) make possible an account of the vast number of semantic observations related to modal meaning. (ibid.: 57)

The first requirement is met through the demonstration of how ‘unrealized force-dynamic potential’ captures the essential commoner among the meanings contributed by expressions of various types of linguistic modal necessities and possibilities.

The concept of force-dynamics is intended to designate a complex physical situation as illustrated in Figure 3.4 from Boye (2005):

Figure 3.4: A force-dynamic situation



A force-dynamic situation consists of a source producing a force which affects the agonist such that it drives the agonist towards a goal, which is at last reached. It is the intermediate picture in Figure 3.4 which corresponds to modal meanings, since expressions of so-called necessity and possibility remain silent with respect to whether the goal is in fact reached.

As for deontic, bouletic and dynamic modalities, the goal is actualization of the predicational content, and the agonist is an entity, such as Bob in (3.22a-b). As for epistemic modality, the agonist is the predicational content, as in (3.22c), and the goal is verification of this predicational content:

(3.22)

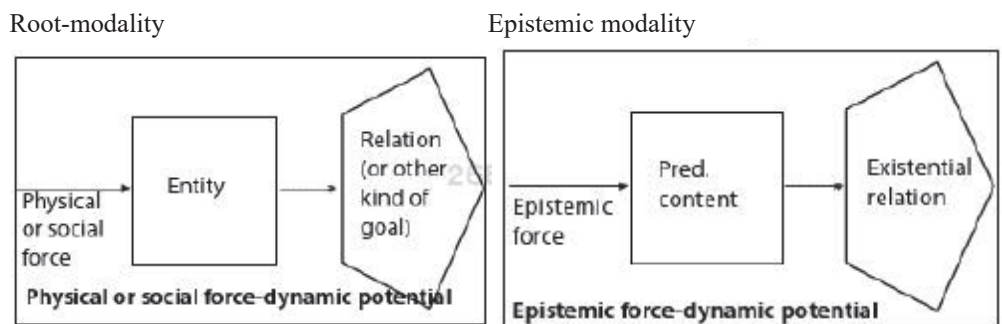
- a. Bob must do the dishes.
- b. Bob gotta throw up.
- c. Bob must be in Rome.

In (3.22a), the agonist Bob is affected by some authority – e.g. his father’s wishes – and this source generates the force driving Bob towards the goal which is actualization of ‘Bob do the dishes’. In (3.22b), Bob’s body in interaction with rotten food may constitute a source which affects the agonist Bob in terms of driving him towards the actualization of ‘Bob throw up’. In (3.22c), the agonist is the predicational content ‘Bob be in Rome’, and this is driven towards verification by a rational force produced by knowledge (Boye, 2005: 71). The conceptual model captures the interpretation of modal expressions, because it reflects that modal expressions evoke the idea of a source, an agonist and a result which is the goal of the source’s applied force on the agonist, without information on whether the goal is reached (Boye, 2005: 58). As for the individual modal items, they express different types of force, e.g. physical force, psychological force, social force and mental or rational force, corresponding to the traditional terms of dynamic, bouletic, deontic and epistemic modality. Boye’s (2005) account is most clearly illustrated through examples with modal necessity. The place of modal possibility within the conceptual domain of force-dynamic potential will be discussed later, as it needs some clarification.

The distinction between actualization and verification answers to Boye’s (2005) requirement to a definition of modality that it should provide a clear distinction between root and epistemic modalities: In root modal meanings, the agonist is an entity, and the goal is actualization

of the predicational content. In epistemic modal meanings, the agonist is a predicational content and the goal is verification of this predicational content. The force-dynamic potentials of root and epistemic modalities are illustrated as follows in Boye (2005):

Figure 3.5: Root and epistemic modality



(Boye, 2005: 65-66)

As mentioned above, it is the intermediate sub-situation in the three-piece model (Figure 3.4) of a force-dynamic situation which corresponds to modal meaning, and hence the presence of ‘unrealized’ and ‘potential’ as defining concepts in addition to ‘force-dynamics’.⁵⁰ These aspects of the definition are crucial to the delimitation of the modal meaning domain. They generate the exclusion of simple assertive meanings as the one figuring in the interpretation of Mary’s utterance of a simple declarative in (3.23):

(3.23) Peter: Where is Bob?

Mary: He is doing the dishes.

Mary’s utterance may well be seen as an expression of epistemic meaning, which is not to be mistaken for epistemic *modal* meaning for that reason. Utterances of simple declarative indicative constructions may be used to express epistemic meaning in the sense that they are likely to be based on some experience, which makes the speaker fully endorse the verification of the predicational

⁵⁰ Also Klinge (1993) makes use of notions like ‘potential’ or ‘potentiality’ in his (1993) work on modal meaning, and Langacker (1990: 25) makes use of the notions of ‘potency’ and ‘potential’.

content.⁵¹ The interpretation of Mary’s utterance in (3.23) is compatible with the assumption that she is either making or has just made an observation of Bob doing the dishes, or that she has some knowledge about Bob’s routines upon which she bases her confident belief. Mary’s utterance in (3.23) thus evokes the idea of an experience or knowledge which produces a rational force driving the predicational content all the way to verification. Mary’s utterance in (3.23) may thus indeed be analyzed in terms of force-dynamics just like utterances of epistemically modalized statements. However, the former presents the predicational content as verified and thereby puts a focus on the third sub-situation in the force-dynamic situation (in Figure 3.4), which shows the result of the force affection (Boye, 2005: 62). The result of the force-dynamic affection is reached, and this is not a concept of *unrealized force-dynamic potential* as pictured in the intermediate sub-situation. Boye’s (2005) inclusion of ‘potential’ in the definition of modal meaning thus restricts modality to non-realized potentials of actualization or verification. This restriction is in accordance with the fact that modal statements like those in (3.22a-b) clearly remain silent about whether Bob throws up in the end or ends up doing the dishes. A similar fact is obvious for the epistemic statement in (3.22c); the predicational content is neither verified nor falsified, as the speaker’s knowledge is merely presented as constituting a rational force driving the predicational content *towards* verification.

While the conception of modal necessity as a force-dynamic potential may be fairly obvious, it may be less clear how modal possibility fits into the *force-dynamic* conceptual space. The notion of force evokes ideas of a direction and a source as something pushing or driving the agonist towards the goal. Such ideas are hardly part of the meanings expressed by linguistic expressions like English *may* and *can*. Boye (2005) himself makes a distinction between force modals and mere potential modals exemplified by the Danish modals *skulle* ‘must, gotta’ and *burde* ‘should, ought to’ on the one hand and *kunne* ‘can, may’ on the other:

(3.24)	Force	Maximum	<i>skulle</i>	
		Non-maximum	<i>burde</i>	
	Mere potential		<i>kunne</i>	(Boye, 2005: 64)

⁵¹ Simple sentences with declarative syntax do not, however, *encode* a certain epistemic meaning, though unmodalized simple declaratives are often associated with interpretations of full epistemic force (see §3.4.2.2 for details).

Modal possibility is thus strictly speaking not a force on Boye's (2005) account, but rather involves the idea of a source which could, but does not, constitute a barrier between the agonist and the goal (see also Talmy, 1988; Sweetser, 1990). This could pose a problem to the understanding of modality as a *force*-dynamic potential, if it is the case that it only fits modal necessity. In what follows, I shall argue that the notion of force indeed is part of a precise conception of modal possibility and explicate the role of force in possibility modal meanings.

The absence of a barrier evokes the idea of something which *could* – but does not – push the agonist away from the goal. Nor does it push the agonist towards the goal; it rather remains passive. Consider the interpretation of the possibility modals *may* and *can* in (3.25a-b):

- (3.25)** a. Bob may eat the last piece of cake.
b. Bob can sing the opera.

The speaker of (3.25a-b) relates the predicational content in the respective utterances to an entity which is best understood as something which could (but does not) prevent Bob from actualizing the events. In (3.25a), the social conduct could have forced Bob away from actualizing 'Bob eat the cake', and in (3.25b), Bob's set of available skills could have pushed him away from actualizing 'Bob sing the opera'. In this sense there is a reference to something constituting a (passive) force in (3.25a-b), but contrary to the force referred to in (3.26a-b) below, the force in (3.25a-b) remains neutral because it does not push the predicational content in any direction.

- (3.26)** a. Bob should eat the last piece of cake.
b. Bob must sing the opera.

In more recent works, Boye (2012a) applies the term 'neutral support' in his description of epistemic possibility. The relevant part of Boye's (2012a) division into degrees of epistemic support is rendered in Table 3.1:

Table 3.1: Epistemic support

Full	Partial	Neutral
Full	Less than full	

(Adapted from Boye, 2012a: 22)

Boye’s (2012a) book is a monograph on epistemic meaning, and hence it is concerned with evidentiality as well as epistemic modality, while root modality is obviously excluded. Nevertheless, the division in Table 3.1 is easily extended to modal possibility in general, if we substitute the epistemic notion of ‘support’ with the more general notion of ‘force’. I propose the use of the term ‘neutral force’ instead of ‘mere potential’. This term reflects that sources of possibility-forces are such that they could push the predicational content in either direction, but however remain passive and hence neutral, as in (3.25) above. Also epistemic possibility involves a concept of a force which remains neutral. If a speaker utters *Bob might be in Rome*, the pool of knowledge upon which we can base assumptions about Bob’s whereabouts constitutes a force which neither drives the predicational content towards or away from verification. The term ‘neutral force-dynamic potential’ thus captures the linguistic intuitions about modal possibility at least as well as ‘mere potential’. In Chapter 5, I shall make use of this division into modal forces in the description of interpretations yielded by Uumarmiumutun modal expressions, as well as in the conclusions regarding which meanings the modals can be used to express. In Chapter 6, the force division in Table 3.1 will be integrated into the model used for making semantic proposals for the individual modals.⁵²

Boye’s (2005) third requirement to a definition of modality is that it makes it possible to account for semantic observations related to modal meaning. This requirement is addressed when Boye (2005: 64) expresses a view on the agonist, result, goal, force and force-dynamic source as abstract variables. From this it follows that a given interpretation of a modal expression may be understood as a set of pairs each consisting of one of the variables plus a concrete value, and the differences among modal concepts conveyed in utterances may be captured as differences among values assigned to the variables for the individual modal interpretation.

⁵² Chapter 6 also includes a discussion of why the division in Table 3.1 is preferable over the distinction between maximum and non-maximum force when the goal is to form semantic proposals for individual modal expressions (see §6.4.2).

3.3.5 Conclusions regarding the conception of modality

Among the conceptions of modality reviewed in §3.3, I conclude that Boye's (2005) notion of unrealized force-dynamic potential offers the most precise and restrictive definition of modal meaning. As argued in §3.3.1, a conception of modality in terms of subjectivity is unfortunate, because it excludes the non-performative root modal meanings from the category. As we saw in §3.3.2, Narrog's (2005, 2009) undetermined factuality is applicable to root and epistemic modal meanings alike. Nevertheless, while the notion of undetermined factuality reflects properties of epistemic modal meaning, it fails to reflect some of the essential properties of root modal meanings. It was therefore judged less appropriate as a *definition* of modal meaning. The definition of modal meaning as unrealized force-dynamic potential, on the other hand, applies equally well to root and epistemic meaning. Moreover, the distinction between actualizational and verificational force reflects what the two types of modal meaning have in common and how they differ.

As for the formal logical conceptions of modality, I have argued that definitions of modality in terms of logical necessity and possibility – as well as related formal and logical notions of entailment vs. compatibility and existential vs. universal quantification – may be problematic when it comes to matching the modal forces expressed by linguistic modal items. As argued in §3.3.3, the application of logical necessity in an analysis of linguistic modal items would require reinterpretations of the notion beyond Lyons (1977), or it requires the incorporation of further formal functions and operators, as done in Kratzer's (1981, 1991, 2012) works. It hence appears less worthwhile to base a definition of linguistic modal meaning on necessity and possibility in a study that seeks to provide a cognitively plausible account of a set of linguistic modal expressions. The definition of modal meaning as 'unrealized force-dynamic potential' is free from the unfortunate inheritance from formal philosophical logic, and it draws a clear division between modal meaning as *unrealized* force-dynamic potential on the one hand, and the non-modal *realized* force-dynamic potential on the other.

Recall the argumentation in §3.3.3 that *must* on epistemic interpretations contributes with the same modal meaning rather than varying between so-called objective and subjective necessity. A closer look at the meaning of *must* through Boye's (2005) notion of force dynamic potential allows us to notice that *must* picks out the same type of force-dynamic sub-situation, regardless of what constitutes the modal source. Consider the sentences in (3.27) and (3.28) below:

- (3.27) a. Alfred is a bachelor. He must be unmarried.
 b. Alfred is a bachelor. Therefore he is unmarried.
 c. Alfred is a bachelor. And so, he is unmarried.
- (3.28) a. The lights are on and the car is in the driveway. John must be home.
 b. The lights are on and the car is in the driveway. Therefore John is home.
 c. The lights are on and the car is in the driveway. And so, John is home.

Let us start with the sentences in (3.27). If it is true that Alfred is a bachelor, then it follows that he is unmarried given the lexical meaning of *bachelor* and *unmarried*.⁵³ This truth holds with or without the presence of *must* in the sentence. But while the truth of the former clause indeed entails the truth of the latter in (3.27a-c), this is not exactly what the speaker expresses by using *must* in (3.27a). The speaker picks out different stages in the interaction between the assumption that ‘Alfred is bachelor’ and the verification of ‘Alfred be unmarried’ in (3.27a) and (3.27b-c) respectively. In (3.27b-c), the assumption that ‘Alfred is a bachelor’ is presented as making the assumption ‘Alfred is unmarried’ true. In other words, the use of *therefore* and *and so* in (3.27b-c) indicate that the assumption ‘Alfred is a bachelor’ is a source which has succeeded in pushing ‘Alfred is unmarried’ *all the way* to verification. In (3.27a), however, the use of *must* presents the assumption that ‘Alfred is a bachelor’ as a source which produces a force that pushes ‘Alfred is unmarried’ *towards* verification, but leaves it open whether this verification is in fact reached.

For comparison, let us consider the use of *must*, *therefore* and *and so* in (3.28), where the state of affairs described by the first part does not in and of itself make the state of affairs described by the second part true. A speaker who utters the (3.28b-c) versions has nevertheless presented the two assumptions as being in a relationship where one leads to the truth of the latter. That is, by using *therefore* and *and so*, she has indicated that the source ‘the lights are on and the car is in the driveway’ has pushed the assumption that ‘John is home’ *all the way* to verification. The use of *must* in (3.28a), on the other hand, merely presents ‘John is home’ as being pushed *towards* verification by the source. When the proposition in the scope of *must* in (3.27a) gets a higher epistemic status than the proposition in the scope of *must* in (3.28a), this is arguably because we

⁵³ This of course presupposes that we interpret *bachelor* as referring to a person with a certain marital status and not to a person with a BA degree.

can easily access the assumption that the source will succeed in pushing the proposition all the way to verification in (3.27a): the predicational content ‘Alfred is a bachelor’ is, after all, roughly the same as the predicational content ‘Alfred is unmarried’. This is not the case in (3.28a), and hence there is no guarantee that the force will succeed in pushing ‘John is home’ all the way to verification. In this way, Boye’s (2005) force-dynamic approach to modality allows us to observe the difference between the inference notion contributed by epistemic uses of *must* on the one hand and the inference notion contributed by expressions like *and so* and *therefore* in cases like (3.27b-c) and (3.28b-c) on the other. Moreover, the force-dynamic approach to modality avoids the involvement of different types of necessity to account for differences which are in fact due to different roles played by the modal sources rather than *must*.

In conclusion, the definition of modal meaning as unrealized force-dynamic potential is found sufficiently restrictive and informative for the present purpose of identifying and analyzing modal expressions in Uummarmiutun. The unrealized modal forces may be neutral or partial (following Boye, 2005, 2012a), and partial force is clearly distinguished from full force, which corresponds to realized force-dynamic potential. In addition to being restrictive enough to distinguish modal from non-modal meaning, the definition of modal meaning as unrealized force-dynamic potential is expected to be elaborated enough to allow us to recognize modal meaning when we see it.

3.4 Modal expressions and their neighbors

3.4.1 Definition of a modal expression

As argued in the previous section, the following definition provides a suitable characterization of modal meaning:

(3.29) Definition of modality

‘Modality’ is meaning which is appropriately conceived of as unrealized force-dynamic potential. Modal meaning evokes the idea of a source which produces a force pushing an agonist towards a goal (see Boye, 2005).

Individual modal concepts are variations of modal meaning as defined above. Epistemic and root modality are defined as follows:

(3.30) Definition of epistemic modality

‘Epistemic modal meaning’ evokes the idea of a source which produces a rational force pushing an agonist=predicational content towards a goal=verification (see Boye, 2005). Since this force pushes towards verification, it may also be referred to as ‘verificational force’.

(3.31) Definition of root modality

‘Root modal meaning’ evokes the idea of a source which produces a physical, moral/social or emotional/psychological force pushing an agonist=entity towards a goal=actualization (see Boye, 2005). Since this force pushes towards actualization, it may also be referred to as ‘actualizational force’.

With a defining characterization of modality in hand, we can formulate the criteria a linguistic expression needs to meet in order to be considered a modal expression.

It is important to keep in mind that like any other meaning, modal meaning may be semantically or pragmatically conveyed (e.g. Boye, 2005: 64). An interpretation of an utterance may thus – as argued in §3.2.1 – contain modal concepts that are pragmatically inferred, e.g. as part of an implicature, without the utterance containing any modal expressions. Example (3.5-3.6) from §3.2.1 is repeated below as (3.32). The string of expressions in B’s utterance is used to communicate modal meaning in that the utterance in this context generates an implicature which contains a modal concept:

(3.32) A: Do you think it’s a good idea to go back to college?

B: Mom and Dad will be SO happy if you do, and SO mad if you don’t.

Implicature: A **should** go back to college.

It would be absurd to construct a class of modal expressions which includes all linguistic expressions that may occur in an utterance yielding an implicature with modal meaning. A more useful way of delimiting the class of modal expressions is one based on encoded meaning – e.g. conventionalized meanings – such that a modal expression is one which always contributes to the

utterance interpretation with a notion of unrealized force-dynamic potential.⁵⁴ Specifications of degree and type of force may be divided in any way between the encoded meaning and pragmatic inferences. As long as an expression encodes meaning such that the notion of force-dynamic potential is necessary to the interpretation of the utterance, it will be considered a modal in the present study. Following Boye's (2005) work, I propose that the definition of a modal expression is phrased as follows:⁵⁵

(3.33) Definition of a modal expression

A modal expression is a linguistic form which encodes unrealized force-dynamic potential. This means that it evokes the idea of a source which produces a less than full force towards actualization or verification of the predicational content.

3.4.2 Extension of the category

3.4.2.1 Modality in relation to evidentiality

The amount of definitions and extensions of the term 'modality' in the linguistics literature poses the importance of explicating the extensional consequences of the employed definition of modality. Such explication is the aim of the remaining part of the chapter, which examines the borders between modality and related meanings.

The inclusion and exclusion of some phenomena are more contested than others. For instance, a fairly contested consequence of the proposed definition of modality is the consideration of evidentiality as non-modal. One scholar who presents the view that evidential meaning is modal is Palmer (2001), who views evidential meaning as a type of epistemic modal meaning and acknowledges a category of 'evidential modality'. Similarly, Matthewson et al. (2007) argue that evidentiality and epistemic modality are not separate categories, and Matthewson (2010) argues that all evidentials are appropriately analyzed as modals. The other way around, von Stechow and Gillies (2010) argue that all epistemic modals are evidential, in that they carry what they (ibid.) call an evidential signal. There are indeed also several works where evidentiality and epistemic

⁵⁴ See also Chapter 6, §6.2.3.2.

⁵⁵ It should be noted that some linguistic expressions encode modal meaning as a procedure rather than as a concept (Wilson, 2011). Chapter 6 includes a brief outline of the relevance-theoretic notion of 'procedural meaning' and the conceptual-procedural distinction in relation to modal meaning (see §6.3.2).

modality are viewed as notionally different from each other (e.g. Nuyts, 2001a; Aikhenvald, 2003, 2004; Boye, 2005, 2012a; Nuckholls and Michael, 2012). Another take on the issue is put forward by Kehayov (2009), who shows that some expressions are compatible with evidential as well as epistemic modal interpretations, and that the interpretation which is foregrounded depends on the context. Due to the existence of the view that evidential meaning is modal, the rationale behind the present account's exclusion of evidentiality from the category of modality will be clarified in due course.

Examples of evidentiality are the meanings expressed by English *seem* and *allegedly* in (3.34) from Boye (2012a) and by Tiriana *ka* and *pidaka* in (3.35) from Aikhenvald (2006):

(3.34)

- a. Carlsberg seems to be the best beer in the world.
- b. Carlsberg is allegedly the best beer in the world. (Boye, 2012a: 3)

(3.35)

- a. Juse irida di-manika-ka
 Juse irida di - manika - ka
 Jose' football 3.MASC.SG - play - RECENT.PAST.VIS
 'Jose' played football (we saw it)'
- b. Juse irida di-manika-pidaka
 Juse irida di - manika - pidaka
 Jose' football 3.MASC.SG - play - RECENT.PAST.REP
 'Jose' played football (we were told)' (Aikhenvald, 2006: 320)

Aikhenvald (2003, 2004) and Boye (2005, 2012a) both argue – though for different reasons – that evidentiality is a category in its own right. Aikhenvald (2004) is concerned with the grammatical expression of evidentiality, and hence her category of evidentiality is a grammatical category. This means that an expression is only an evidential proper according to Aikhenvald (2004) when it is part of a grammatical paradigm where all members are concerned with distinctions pertaining to information source. This does not mean, though, that she neglects languages' ability to convey evidential meaning by means apart from grammar. Other ways to convey evidential meaning are lexical expressions and non-evidential categories, such as passive and perfect, with evidential semantic extensions. The latter Aikhenvald (2004) calls 'evidential strategies'. Lexical expressions

with evidential meaning are excluded from Aikhenvald’s (2004) category of evidentials through an analogy to tense; if lexically expressed evidential meaning is seen as evidentials, then expressions like *yesterday* and *tomorrow* could as well be seen as part of the tense system (ibid.: 10). Evidentiality is thus a grammatical category according to Aikhenvald, just like tense and gender.

In accordance with the present focus on substance rather than form and the substance-form relation, the limitations of the category of modality and its relation to the category of evidentiality is based on substance. I follow Boye’s (2005, 2012a) arguments that evidentiality is not a sub-branch of epistemic modality, along with his distinction between evidential meaning and epistemic modal meaning. A linguistic expression can indeed have modal and evidential meaning properties at the same time. Nevertheless, some evidential expressions – e.g. *allegedly* (see below for arguments) – do not restrict modal force (to an unrealized force-dynamic potential) and a modal semantics is therefore not appropriate for those expressions.⁵⁶ For this reason, evidentiality cannot be a sub-category of epistemic modality. Rather than being in a hierarchical relationship, evidentiality and epistemic modality should be seen as forming, as Boye (2012a) shows, a category of epistemicity.⁵⁷ Table 3.2 shows Boye’s (ibid.) notional category of ‘epistemicity’, which is based on data from a wide range of the world’s languages:

Table 3.2: Boye’s (2012a) notional category of Epistemicity

Epistemicity Justificatory support	
Epistemic modality • Epistemic support	Evidentiality • Epistemic justification

⁵⁶ Also Nuyts (2001a) acknowledges that linguistic expressions may have epistemic modal and evidential meanings at the same time as well as the existence of expressions which are restricted to only one of these types of meaning. Boye’s (2012a) monograph on epistemic meaning treats the relation between epistemic modality and evidentiality to a greater depth than Nuyts (2001a) does in his monograph on epistemic modality. Moreover, Boye’s (2012a) work is based on a larger sample of languages from several language families, whereas Nuyts’ (2001a) monograph is based on three West Germanic languages. I therefore make use of Boye’s (2012a) work in the disentanglement of epistemic modality and evidentiality in the present chapter as well as in the development of semantic proposals intended to reflect the various groups of epistemic meanings in Chapter 8.

⁵⁷ Root modality is for obvious reasons excluded from the category of epistemicity.

Epistemic modality and evidentiality differ in that the former has to do with epistemic *support* (corresponding to epistemic *force* here, see §3.3.4 above), whereas the latter has to do with epistemic *justification*. Let us look at the respective notions in turn and then see how they differ.

‘Epistemic support’ is related to the notions of ‘degree of certainty’ and ‘degree of commitment’ (Boye, 2012a: 2). Epistemic support covers a scale divided into full support, partial support and neutral support (Boye, 2012a: 22):

Table 3.3: Boye’s (2012a) force distinctions

Full	Partial	Neutral
Strong	Weak	
More than neutral		Neutral
Full	Less than full	

Linguistic expressions may be lexically restricted to full, partial or neutral support. Modals handled as expressions of modal possibility in other works, such as English *may* and *can* (e.g. van der Auwera and Plungian, 1998) express neutral support. Modals handled as expressions of modal necessity in other works (ibid.), such as English *must*, express partial support. Some languages – e.g. Tamil and Korean – appear to divide ‘partial support’ lexically into ‘strong partial support’ and ‘weak partial support’ (Boye, 2012a: 135-6). Basque *ote* (Boye, 2012a: 82) and Lega Shebunda *ámbo* (Boye, 2012a: 75-77) can be used to convey partial as well as neutral support, and this lexical packing of meaning is described as ‘less than full support’. As we shall see later, this notion will come in useful in the description of Uummarmiutun *hungnaq* ‘probably’.

An example of an expression of full support is Hixkayána *mpini*, which covers meanings like ‘certainty’, ‘prediction’ and ‘warning’ (Boye, 2012a: 62-63). An expression restricted to full support obviously falls outside the category of modal expressions on the unrealized force-dynamic potential definition; they express a *realized* force-dynamic potential, where the pool of knowledge has succeeded in pushing the predicational content all the way to verification. Hence they pick out the *result* of a force-dynamic situation rather than a force-dynamic *potential* (Boye, 2005). Some expressions such as West Greenlandic *qquuqi* (Boye, 2012a: 69-71) may be used to express partial as well as full support. Such lexical packing of meaning Boye (2012a) describes as ‘more than neutral support’. As for the categorization of expressions restricted to ‘more than neutral support’,

I assume that these can be used to express a (modal) partial support meaning, a (non-modal) full support meaning or a meaning indeterminate with respect to whether it is modal or non-modal.⁵⁸

While epistemic modal meanings are concerned with degrees of epistemic support, evidential meanings represent different kinds of epistemic justification for a predicational content. This covers e.g. source of information and evidence (Boye, 2012a). A conception of evidentiality as epistemic justification is thus broader than the one found in Aikhenvald (2003, 2004). Epistemic justification includes specifications pertaining to the evidence beyond specification of source of information, whereas Aikhenvald's (2003, 2004) evidential category contains expressions of information source only. The establishment of a category of 'epistemic justification' is fortunate, given the existence of linguistic expressions which clearly evoke the idea that the truth of the predicational content in their scope is justified on the basis of evidence of a certain type which may not be appropriately accounted for as a type of information *source*. One example is Norwegian *jo* 'as you (should) know' (Berthelin, Borthen and Knudsen, 2013), which is fairly similar to the German particle *ja*. Norwegian *jo* can hardly be said to restrict information *source*, though the expression indeed restricts the evidence in another important way, i.e. such that the evidence is accessible to the hearer in addition to the speaker.⁵⁹ Such expressions have something in common with the pure information source markers, in that both types of expressions encode restrictions on the evidence justifying the proposition. It is therefore valuable to acknowledge their common properties, e.g. as markers of epistemic justification, while at the same time to acknowledge that they restrict different properties of the evidence. It should be noted that *jo* is not a modal expression, since a predicational content in the scope of *jo* is presented as verified (Berthelin et al. 2013; Berthelin, 2014). Another linguistic expression benefitting from this broader conception of evidentiality is Uumarmiutun *niq* 'apparently', which does not restrict the *type* of information source but nevertheless clearly evokes the idea of a piece of evidence (see Chapter 5, §5.2.5, and Chapter 8).

As for the relationship between evidentiality and epistemic modality it is important to keep in mind that an evidential expression may have meaning pertaining to epistemic support – i.e.

⁵⁸ The existence of such expressions is obviously not a threat to presuming a category of modal meaning. After all, the existence of a conceptual category does not predict that all linguistic expressions encode a meaning which falls on one of the sides of the category – only that some expressions do.

⁵⁹ Recall also Nuyts' (2001b) 'intersubjectivity' mentioned in §3.3.3. And see Lazard (2001) on mediative evidentiality.

epistemic force – in addition to epistemic justification; Lega-Shabunda (Niger-Congo) *ámbo*, for instance, expresses reportative evidentiality plus less than full epistemic support (Boye, 2012a: 75-77). A linguistic expression may thus indeed be evidential and modal at the same time. The separation of the two categories is motivated by the existence of linguistic expressions which are evidential only or modal only. As mentioned above, Norwegian *jo* ‘as you (should) know’ expresses evidential meaning and full epistemic force, which is a non-modal force. Moreover, some evidentials restrict epistemic justification only, while the epistemic status is left open. For instance, as Boye (2005) writes, the evidential meaning of *allegedly* in (3.36) has nothing to do with the necessity, disposition or possibility of whether Bob is in Berlin (ibid.: 71):

(3.36) Bob is allegedly in Berlin

Even though certain kinds of epistemic justification may affect the epistemic status of the predicational content, this is not to be confused with epistemic support; epistemic support is distinct from the degree of reliability of the epistemic justification (Boye, 2012a: 166). As I understand Boye (ibid.), the expression *allegedly* provides information about the evidence for the predicational content *without lexically restricting* to which degree this evidence supports the predicational content, though this may be *inferred* from the context. The example in (3.37) below will be used to illustrate the difference between degree of support and degree of reliability:

- (3.37)** a. Bob must be in Berlin.
b. Bob’s in Berlin, I hear.

An utterance of (3.37a) conveys that there is partial epistemic support for the predicational content. This degree of support is a result of the use of *must* (Boye, 2012a). Let us assume that *I hear* in (3.37b) provides justification of the predicational content in that it indicates that the speaker has heard a report, and that this report justifies the assumption that Bob is in Berlin.⁶⁰ If the hearer knows (that the speaker knows that the hearer knows) that the speaker has very good sources regarding Bob and his whereabouts, this renders the epistemic justification more reliable than if such assumptions about high quality sources are not available. The degree of reliability is thereby

⁶⁰ Also Nuyts (2001a: 110) assigns an evidential meaning to *hear*.

not encoded in *I hear*, but rather depends on the available assumptions about the source in the given context, and hence it is a result of pragmatic inferences. Epistemic modals, on the other hand, restrict the degree of support rather than leaving the epistemic status of the predicational content to pragmatic inference. In short: epistemic modal expressions (whether or not they are also evidential) encode degree of support and thereby restrict the epistemic status of the predicational content lexically. A non-modal evidential expression either a) does not encode restrictions on the epistemic status of the predicational content, but rather leaves this to pragmatic inference, or b) encodes a restriction on *full* epistemic support.⁶¹

The question is now whether all epistemic modals are inherently also evidential, as von Fintel and Gillies (2010) argue. According to von Fintel and Gillies (*ibid.*), English *must* carries an “evidential signal” indicating that the speaker has reached her conclusion via an indirect inference. They back up their claim with the observation that (3.38a) is appropriate in the given context, whereas (3.38b) is not:

(3.38) Context: Seeing the pouring rain:

- a. It’s raining.
- b. ? It must be raining. (von Fintel and Gillies, *ibid.*: 3)

Von Fintel and Gillies (*ibid.*) argue that *must* is inappropriate in (3.38b) because the speaker has direct evidence for the predicational content, and therefore *must* restricts evidentiality to indirectness. Von Fintel and Gillies (*ibid.*) extend this analysis of English *must* and claim that all epistemic modals cross-linguistically have this evidential component of ‘indirect inference’. I shall not dispute Fintel and Gillies’ (*ibid.*) observations regarding (3.38) and I shall, for now, remain neutral to their conclusions regarding English *must* and evidentiality. It is nevertheless not clear to me that these conclusions can be extended cross-linguistically without empirical testing. Leaving aside for now von Fintel and Gillies’ (2010) arguments that *must* is always strong – i.e. restricted to full support in the terminology used here – their claim that all epistemic modals are restricted to indirect inference entails that all linguistic items that express decreased certainty also express evidentiality. I.e. if all epistemic modals are restricted to indirect inference, then any expression

⁶¹ The semantics and pragmatics of various types of epistemic expressions are outlined in more detail in Chapter 8. See also Chapter 5 for analyses of Uummarmiutun *guuq* ‘hearsay’ (§5.2.3) and *niq* ‘apparently’ (§5.2.5).

restricted to neutral or partial epistemic support – including *maybe* and *probably* – also restricts indirect inference. Even von Fintel and Gillies (2010) themselves argue for a separation of the modal parameter from the evidential parameter, and there it hence no reason to assume – even if one follows von Fintel and Gillies (2010) – that modality should be conflated with indirect evidentiality per default. Matthewson (2015) supports von Fintel and Gillies’ (2010) position that all epistemic modals are evidential with some cross-linguistic evidence, but argues that rather than being restricted to indirectness, modals cross-linguistically vary with respect to what evidential restriction they encode. However, it seems to me that it should rather be an empirical question whether the epistemic modal under investigation also encodes a restriction on evidentiality. In the section on the Uumarmiutun epistemic expression *hungnaq* ‘probably’ (Chapter 5, §5.3.2), such empirical investigation is performed.

3.4.2.2 Modality in relation to full epistemic certainty and causation

Expressions of full certainty make a reference to the speaker’s knowledge, just like epistemic modals like *might* and *must* do. It is therefore reasonable to view full certainty as epistemic meaning. In (3.39a) below, for instance, the speaker overtly expresses that she is certain that ‘Peter is a good singer’, from which it is reasonable to assume that some knowledge or experience supports her certainty.⁶² And in (3.39b), the speaker makes an explicit reference to the existence of evidence which in a similar fashion as in (3.39a) leads her to the conclusion that ‘Peter is a good singer’ is true:

- (3.39) a. Peter is certainly a good singer.
b. It turns out that Peter is a good singer.

While they do belong on the epistemic scale, expressions of full epistemic force are not expressions of *unrealized* epistemic force-dynamic *potential*, since they present the predicational content as verified. For comparison, consider (3.40) below:

⁶² This is obviously not the case if the utterance is used ironically, but this should not concern us here.

(3.40) Peter must be a good singer.

In (3.40), a pool of knowledge forces the predicational content towards verification, and the same is the case in (3.39). The only difference is that in (3.39), the verificational potential is realized.⁶³

Utterances of unmodalized simple declaratives may be used to express full epistemic force. It should be noted however, that whether they do so is context dependent rather than encoded. That is, it is not always the case that the use of declarative syntax in an utterance communicates commitment to the propositional content; the illocutionary force of an utterance should be separated from the mood encoded by the linguistic items used in the utterance (Wilson and Sperber, 1988/1998).⁶⁴ In (3.41) below, for instance, Mary hardly communicates commitment to the proposition:

(3.41) Polly: Guess what I did yesterday!

Mary: You went bungee jumping.

Mary uses declarative syntax in her utterance, but she does not express commitment to ‘Polly went bungee jumping yesterday’, since her utterance is clearly used to represent a guess of what the world is like rather than an assertion about what the world is like. This is not to say that declarative syntax has no meaning; after all, it is clear that there is a conventional difference between the use of declarative syntax and e.g. interrogative syntax. I assume along with Wilson and Sperber (1988/1998) that the distinction between declarative, interrogative and imperative sentences is to be found in their respective ways of restricting the interpretation process in terms of propositional attitude, e.g. an attitude towards *p* as desirable. Wilson and Sperber (1998) conclude that

[i]mperative sentences (or rather, such characteristic features as imperative verb inflection, negative marking and imperative particles such as “please”) are linked to representations of potentiality and desirability. Interrogative sentences (or rather such characteristic features as interrogative word order, intonation and interrogative particles) are also linked to representations of desirability, in this case desirability of a thought rather than a state of affairs. (Wilson and Sperber, 1998: 286.)

⁶³ See also the distinction between *must* on the one hand, and *therefore* and *and so* on the other in §3.3.5.

⁶⁴ Wilson and Sperber (1998) is a reprint of Wilson and Sperber (1988).

From this it follows that declarative sentences – or rather, such characteristic features as verb inflection and word order – are probably linked to representations of saying that or describing a state of affairs in the world, which is obviously not the same as asserting or claiming that the descriptions are true. Or as Clark (1991: 47) puts it, “[a] declarative with propositional content *P* communicates that *P* represents a thought entertained as a description of an actual or possible state of affairs”. The utterance of a description of a state of affairs can be used as a guess, i.e. the utterance represents a description of a guess, as in (3.41) above, just like it can be used as a promise or a claim about what the world is like, as in (3.42) and (3.43) respectively:

(3.42) I am here for you.

(3.43) John: What was Polly up to yesterday?

Mary: She went bungee jumping.

While utterances of declarative syntactic constructions should not be taken to encode full epistemic force, it is obvious that they are often used to express descriptions of what the world is actually like. This is not unique to English; in Kannada (Dravidian) and Tidore (West Papuan), for instance, full epistemic force may be conveyed by the absence of an overt epistemic marker (Boye, 2012a: 133). In conclusion, utterances of simple declarative constructions typically give rise to full epistemic force interpretations. However, aspects of the context (e.g. the assumption that the utterance is used as a description of a guess⁶⁵) as well as overt epistemic markers of less than full force may lead to less than full force interpretations. Throughout the data collection, consultants were sometimes asked to compare an unmodalized simple declarative sentence with a corresponding sentence containing an epistemic modal. Due to the tendency of unmodalized simple declaratives to be associated with full epistemic force, other things being equal, the comparison of

⁶⁵ More precisely, the higher-level explicature [Mary guesses that [Polly went bungee jumping yesterday]] is more relevant than the first-order description [Polly went bungee jumping yesterday] in (3.41), and this higher-level explicature does not entail the assumption that Mary commits to the truth of the embedded proposition represented by the declarative construction. Similarly, the higher-level explicature [speaker promises the hearer that [she is there for him]] is more relevant than the basic explicature [speaker is there for hearer] in (13), and in this case the higher-level explicature does entail the assumption that the speaker commits to the truth of the embedded proposition represented by the declarative construction (see Chapter 6, §6.2.3.2, for details on the relevance-theoretic notion of higher-level explicatures).

minimal pairs consisting of a simple declarative and the corresponding epistemically modalized construction are reasonably expected to shed light on the properties of the given epistemic modal expression.

Full certainty has that in common with epistemic and root modality that they all are force-dynamic notions. A legitimate question here is why the boundary around modality is drawn around force-dynamic potential, and not more broadly around force-dynamics? The latter option would have included full certainty in the category of modality. In other words, why do we need the category of modality to exclude realized force-dynamic potential? Full certainty could perhaps be seen as related closely enough to epistemic modality to be subsumed in the category, as both types of meaning are concerned with the epistemic force scale. However, in doing so it follows that also causation should be part of the category of modality, which is presumably a controversial expansion of the category.

Just as the epistemic force – i.e. the verificational force – drives the agonist towards a goal, so does the actualizational force. As we saw in §3.3.4, an actualizational force-dynamic potential drives the agonist, which is an entity, towards actualization of the event. An unrealized actualizational force-dynamic potential is referred to by using expressions like e.g. *may*, *should* and *must* as in (3.44):

(3.44) *Repeated from §3.3.4*

- a. Bob may eat the last piece of cake.
- b. Bob should eat the last piece of cake.
- c. Bob must do the dishes.

The resulting sub-situation of an actualizational force-dynamic situation is that the actualizational force has succeeded in driving the agonist all the way to actualizing the event. Boye (2005) shows that causation as expressed by *make* in (3.45) corresponds to the final sub-situation in a force-dynamic situation, in that the mother (source) imposes a force on Bob (agonist) which actually results in him eating:

(3.45) Bob's mother makes Bob eat.

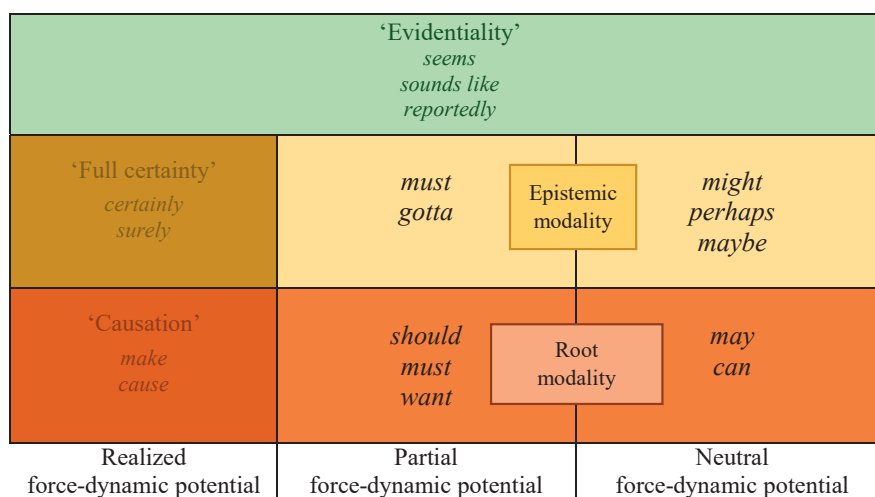
The force-dynamic potential is thereby realized, and *make* is thereby appropriately analyzed as a force-dynamic expression. *Make* is however not an expression of *unrealized* force-dynamic *potential*, and thereby not a modal expression in spite of the close semantic meaning. The force-dynamic model allows us to discover what root modality and causation have in common and what distinguishes the two concepts; they are both force-dynamic concepts in that they both include the notions of a source, a force and a result. They differ with respect to the force-dynamic sub-situation they pick out (Boye, 2005). As for the causatives, the whole force-dynamic situation including the reached goal is represented. Modal expressions, on the other hand, remain silent with respect to whether the result is reached. If we include the notion of full epistemic force in the category of modal meanings, then we should also be ready to include causation, as both notions are notions of full force (see also Figure 3.6 in the next section). From this it follows that expressions like *make* and *cause* are modal expressions, if expressions like English *certainly* and the German and Norwegian particles *ja* and *jo* are modal expressions. While this would probably be objected on intuitive grounds, I want to highlight another reason for excluding causation along with full certainty: full certainty and causation are significantly different from the rest of the meanings on the force-dynamic spectrum, because they involve a force-dynamic potential which is realized (see Boye, 2005).

3.4.3 Conclusions: Modality and neighboring meanings

Given Boye's (2005) account of how modality relates to causation, causation seems to occupy the conceptual space next to modality on the dimension of actualizational force. This is illustrated in Figure 3.6 below. In addition to the borders towards causation, Figure 3.6 illustrates how modality relates to evidentiality and full certainty in accordance with the argumentation outlined above. English expressions are inserted as exemplifications of the modal and non-modal categories:⁶⁶

⁶⁶ Please note that Figure 3.6 should not be understood as an empirically founded semantic map of English. It is rather an illustration of terms and categories operationalized in the present thesis.

Figure 3.6: Conceptual space of modality and neighboring meanings



The yellow area is the dimension of verificational force, and the orange area is the dimension of actualizational force. The bright yellow area and the bright orange area together make up the category of modality, namely the area of unrealized force-dynamic potential. The yellow area and the green area together make up the category of epistemicity. The map reflects that the encoding of evidentiality is independent of realized vs. unrealized potential (i.e. independent of force in general), as it is an empirical question whether a given evidential expression also encodes a restriction on verificational force.

3.5 Summary

A study of modal expressions relies on a clear definition of what modal meaning is. The present chapter has concluded that modal meaning is appropriately defined as unrealized force-dynamic potential, following Boye (2005). Before landing on this definition, other proposals on how to define and characterize modal meaning were considered. Subjectivity, as in speaker involvement in the sense of Palmer (1986), was quickly eliminated as a definition of modality because it excludes root modal meaning from the category. Hereafter Narrog’s (2005, 2009) conception of modality ‘undetermined factuality’ was found applicable to modal meanings, though not desired

in a definition because it fails to capture essential properties of root modal meanings. The chapter has also discussed options of defining modality in terms of necessity and possibility, which are concepts inherited from modal logic in the discipline of philosophy. I have argued that the traditional formal logic notion of ‘necessity’ fails to apply to linguistic meaning. Two solutions to the problem have been examined; Kratzer (1981, 1991, 2012) and Lyons (1977). Lyons (1977) explores the difference between philosophical and linguistic modal necessities, as this could save necessity and possibility a seat in the definition of modal meaning. However, it turns out that the notion of logical necessity still requires too much adjustment to apply to linguistic meaning, and that it is therefore not worthwhile to base a definition of linguistic modal meaning on the conception of necessity and possibility. Kratzer’s (1981, 1991, 2012) solution requires the introduction of other formal notions like functions and sets which do not match with the present endeavor of accounting for and comparing semantic and pragmatic properties of modal expressions in a cognitively plausible framework. Boye’s (2005) definition of modal meaning as unrealized force-dynamic potential was found to capture root as well as epistemic modal meaning. It is precise enough to allow the researcher to recognize a meaning as modal when it occurs in an interpretation, and it is restrictive enough to exclude related meanings such as evidentiality, full certainty and causativity from the category. Last but not least, it comes with labels for types of forces and a notion of source which are useful for accurate descriptions of various modal concepts.

Throughout the thesis, the definition of modal meaning as unrealized force-dynamic potential will be employed in various ways. In the data analyses in Chapter 5, it will serve to determine whether a given Uummarmiutun expression is modal, and the force-dynamic terminology will be employed in the analyses of the various modal and non-modal concepts figuring in the interpretations of utterances containing the Uummarmiutun expressions under investigation. As for the semantic proposals for the four Uummarmiutun modals in focus of the study, these will be phrased within the framework of relevance theory. This decision is due to, among other things, the recognition of the need for a pragmatic theory in a semantic and pragmatic account of modal expressions (see Chapter 6, §6.2). Nevertheless, as the reader will note, the semantic proposals will incorporate the notion of modal force from Boye (2005) and the division of forces from Boye (2012a: 122) shown in §3.3.4.

Chapter 4:

Methodology

4.1 Introduction

Semantic fieldwork⁶⁷ is aimed at establishing facts about linguistic meaning in collaboration with people who are competent in the language under description (henceforth the l.u.d.). Facts about linguistic meaning can pertain to how a set of meanings (e.g. modality, tense, kinship relations, spatial relations) are expressed in that language or, the other way around, they may pertain to what a set of expressions in that language mean. The present study is concerned with the latter type of semantic research endeavour, more specifically with establishing facts about the meaning of a set of Uummarmiutun expressions assumed to have modal meaning. This amounts to determining a) whether or not they express modal meaning as defined in the previous chapter, and b) the exact semantic and pragmatic properties of the given modals.

Facts about the Uummarmiutun expressions under investigation obviously need to be based on some sort of data, but meaning is not directly observable (Bohnenmeyer, 2015: 13-14). This poses a challenge to semantic fieldwork, which is slightly different from e.g. syntactic and phonetic fieldwork.⁶⁸ Sentences or texts in a given language do not reveal direct information about the meaning of their elements. As Bochnak and Matthewson (2015) write, “[...] *most utterances by native speakers provide some positive information about phonetics, phonology, morphology and*

⁶⁷ As in Bochnak and Matthewson (2015), the term ‘fieldwork’ is used here to refer to “[...] *research conducted on a language of which the linguist is not a native speaker, typically involving one-on-one interviews with native speaker consultants.*” (ibid.: 2). Fieldwork may obviously also be conducted on one’s own native language. This chapter is concerned with the situation where the linguist and interviewer is not a speaker of the l.u.d., as this applies to the research situation in which the present thesis was developed.

⁶⁸ Thanks to Tyler Gösta Peterson for teaching me about semantic fieldwork throughout his course on Semantic Fieldwork Methods at the 3L International Summer School on Language Documentation and Description, Leiden University Centre for Linguistics, July, 2010.

syntax – simply by providing exemplars of grammatical, well-pronounced constructions. But the same is not true for semantics” (ibid.: 2). Moreover, especially the generalizations we employ when we use expressions of abstract meanings, such as modal expressions, are not directly accessible to us (e.g. Matthewson, 2004; Bochnak and Matthewson, 2015: 2; Deal, 2015: 157). The researcher therefore needs to prepare well for the interviews concerning such abstract meaning. This includes designing questions that facilitate responses reflecting what speakers of the l.u.d. know about the meaning and use of expressions in their language.

The present chapter is concerned with how the knowledge forming the basis for the semantic and pragmatic analyses of Uummarmiutun modal expressions was collected in collaboration with native speakers of Uummarmiutun. After the introduction, §4.2 presents methodological considerations in semantic fieldwork and their application in the present study. In §4.2.1 I argue, following Matthewson (2004), that knowledge about linguistic meaning is best elicited through an approach where sentences in the l.u.d. are discussed with speakers of the language in relation to contexts where these sentences can be appropriately uttered. As the data under analysis in the present study is obtained through ‘elicitation’, §4.2.2 first addresses how the activity of elicitation is manifested in a semantic fieldwork situation. We then move on to a detailed presentation of the various elicitation frames employed throughout the data collection process. These are listed as Frame A-G along with examples. Questions designed within those frames were used in the interviews to facilitate consultants in sharing what they know about the meaning and use of modal expressions in Uummarmiutun. Potential methodological pitfalls and how to mitigate them are addressed in relation to the individual elicitation frames, and §4.2.3 provides a discussion of potential concerns pertaining to judgment tasks and elicitation in general. The final section, §4.3, introduces the consultants who have kindly shared their knowledge with me and outlines how the data was processed and how it is presented in the thesis.

As the reader will note, the data points in the present study have the shape of excerpts from the interviews, which is not standard practice in the field linguistics literature. The choice to use quotes from the interviews as data points is intended to increase transparency by means of showing exactly what the consultants have shared about linguistic meaning in their language that lead to the analyses and conclusions put forward in the thesis.

4.2 Semantic fieldwork methods

4.2.1 Challenges in semantic fieldwork

As mentioned in the introduction, an utterance does not in and of itself reveal the meaning about itself or its parts (Bohnenmeyer, 2015). Speakers of the language, on the other hand, possess knowledge about the meaning and use of expressions (be they sentences, words or morphemes) in their language, as well as the power to share this knowledge with the semantic fieldworker. As speakers of a language, we apparently know – at least unconsciously – what we need to know in order to use our language for communication. We cannot, however, be expected to be able to describe the grammatical patterns of our language, provide the full range of meaning nuances conveyable by a given expression or articulate the rules that predict our language use – at least not on the spot. As Matthewson (2004) writes “[...] *it would be very unlikely for a native speaker of any language to be able to describe accurately the meaning of a morpheme having to do with tense or aspect*” (ibid.: 384), and I find it reasonable to assume that modal meaning is just as difficult to explain in isolation.

Modal expressions encode highly abstract meanings, as they allow speakers to talk about states of affairs which are not actualized in the current situation. Through the use of modal expressions, speakers describe actions as necessary or possible in relation to circumstances (root modals) or to sets of knowledge (epistemic modals). It is therefore reasonable to assume that the choice to ask speakers of a given language directly to explain the meaning of modal expressions is just as unfortunate as asking directly about the meaning of e.g. an aspectual affix. Direct questions about the meaning of an expression are unlikely to result in responses concerning the whole range of meaning properties and uses of that expression. As Matthewson (2004) puts it,

[t]ry, for example, asking an undergraduate linguistics class to explain the felicity conditions on *the*. In my experience, the most common response to this question is that “you use *the* when you are talking about something specific.” This, like most native-speaker generalizations about semantics, contains a kernel of truth but is not explicit enough to have predictive power. What does “specific” mean? A statement of this type may be useful as a first clue, but it does not tell us exactly when *the* can and cannot be used (Matthewson, 2004: 380).

I do not doubt the fruitfulness of asking direct questions about the meaning of a word or even a bound morpheme; as Matthewson (ibid.) notes, such questions may indeed provide insights into its

meaning. Nevertheless, direct questions about the meaning of single expressions should not be the main elicitation frame.

There are also good reasons to avoid basing a semantic account of linguistic expressions on translations only, even though asking speakers of the language for translations does provide the non-speaker linguist with valuable clues about linguistic meaning. Translations should though be used as *clues* about the meaning they represent rather than being viewed as results (Matthewson, 2004). First of all, languages carve up the conceptual space differently; the extension of an expression in one language does not necessarily overlap fully with the extension of an expression in another language. A datum consisting of a translation of a sentence in the l.u.d. into a sentence in the metalanguage is therefore an indication of only one of the possible meanings the expressions in the l.u.d. sentence can be used to convey. Moreover, the sentence may be structurally ambiguous, which again means that the translation will only reflect one of the interpretations of the l.u.d. sentence.

Even if a translated corpus is available in the l.u.d. and the expression under investigation is translated into the same English expression throughout the corpus, the English expression used in the translation may be less restrictive than the expression under investigation. If for instance the researcher is interested in knowing how epistemic partial force ('epistemic necessity') is expressed in the l.u.d., she may ask for a translation of a sentence containing an English expression such as *must* which can be used to express this target meaning in English. Suppose that she asks the consultant to translate the sentence *Ann must be in court*. This English sentence is ambiguous between at least two interpretations, namely a) an epistemic interpretation like 'it is certain that Ann is in court', and b) a root interpretation like 'Ann is obliged to be in court' (see Groefsema, 1995: 53). The consultant offers a translation into the l.u.d., but the researcher will not know whether the translation is compatible with the a-interpretation or the b-interpretation. That is, she cannot conclude on the basis of the translation that this l.u.d. sentence contains an expression of epistemic partial force, since it may just as well contain an expression of root partial force – unless she first describes a context where e.g. someone is wondering where Ann is, and the speaker in the scenario is almost certain that she is in court. Even in cases where the expression under investigation is less abstract, the failure to provide a context may lead to confusing results (see e.g. Cover, 2015: 241). The use of imaginary contexts in the discussion of l.u.d. sentences and their translations is therefore crucial to increase the likeliness that consultant and researcher are on the

same page with regards to the meaning under discussion (see Cover, 2015; Bohnemeyer, 2015: 25).

Being aware of pitfalls such as those described above, linguistic meaning is appropriately approached in relation to contexts in the successful elicitation of data intended for semantic and pragmatic analysis (Matthewson, 2004). Therefore; on this approach, the basis for semantic and pragmatic analysis is – simply put – a collection of meanings which the expression under investigation can be used to express, plus a collection of the neighboring meanings which it cannot be used to express.

As for the present study, the Uummarmiutun expressions under investigation are tested for the meaning properties they appear to have judging from their entries in the Uummarmiutun dictionary (Lowe, 1984) as well as other meanings that modals tend to pack together cross-linguistically. Also the conceptual map of modal and neighboring meanings shown in Chapter 3 (Figure 55) will be a guiding tool for forming hypotheses to be tested; if an expression E can be used to express meaning M, then it should be tested whether E can also be used to express the meaning *next to* M in the conceptual space. In line with the above argumentation (see also Matthewson, 2004; Deal, 2015), data for determining which meanings are covered by a given expression should not be obtained solely by asking a native speaker directly if E can be used to express M. A more appropriate question is whether a sentence containing E can be used to express a communicative intention containing M in a situation S. In other words, a collection of communicative intentions where E is appropriately used in a certain context plus knowledge of neighboring communicative intentions where the use of E is not appropriate, is a good basis for semantic and pragmatic analysis. A data set of this kind sheds light on the borders of the meaning of the expression under investigation, upon which a proposal can be made regarding the semantics of the expression.

4.2.2 Elicitation and elicitation techniques

4.2.2.1 Elicitation in semantic fieldwork

The present study of Uummarmiutun modals is based on data that has the form of elicited knowledge about linguistic meaning. The Oxford Dictionaries define the term ‘elicitation’ as

follows: “*evoke or draw out (a reaction, answer, or fact) from someone*” (Oxford University Press, 2012). This definition of the act of eliciting may yield associations to a mechanic question-response interaction between fieldworker and consultant. A good field linguistic interview, however – especially if the topic is semantics or pragmatics – may rather have the shape of a conversation about the phenomenon under investigation, which is centered around sentences in the l.u.d. The responses that are evoked by the questions have the shape of judgments, explanations and elaborations. The task of the semantic fieldworker is to prepare questions which not only a) yield judgments with respect to the extension of the given expressions, but also b) facilitate additional reflections and explanations in order to get a detailed and correct picture of its meaning (see also Berthelin, 2012). A good field linguistic interview is semi-structured by the elicitation frames while it also consists of spontaneous reflections and further discussions.

Elicitation as a data collection technique involves three principal components; 1) a stimulus provided by the researcher, 2) a task explained by the researcher, and 3) a response from the consultant (see Bohnemeyer, 2015: 15). Elicitation is a powerful tool in linguistic fieldwork, as it allows for direct and rigorous testing of hypotheses. If an expression E is suspected to cover the meaning M, the researcher can design a stimulus and ask the consultant to perform a task where his response can reasonably be taken as an indication that E can (or cannot) be used to express M.

4.2.2.2 Elicitation techniques

The most elaborated categorization of types of semantic elicitation techniques is found in Bohnemeyer (2015). In his epistemology of semantic elicitation, Bohnemeyer (2015) argues that there are seven – and only seven – types of elicitation techniques in linguistics, which correspond to different combinations of stimulus type and target response type. Table 1.2 below renders his overview of possible combinations of stimulus and response. Most of the techniques employed in the present study fall under Bohnemeyer’s (2015) Type II, Type III, Type V and Type VI. These elicitation techniques are marked with red squares in Bohnemeyer’s (2015: 22) table:

Table 4.1: Bohnemeyer's (2015) classification of elicitation techniques

Response stimulus	Target language utterance	Contact language utterance	Metalinguistic utterance: judgment	Metalinguistic utterance: description	Non-linguistic representation
Target language utterance	Type I—completion; association	Type II—translation	Type V—judgment (well-formedness, truth, felicity)	Type VI—explication by paraphrase, scenario	Type VII - demonstration of referents; act-out tasks
Contact language utterance	Type II—translation	(these combinations go beyond target language elicitation)			
Content of a linguistic representation (in the target or contact language)	Type III—production in a given contextual scenario				
Content of a non-linguistic representation	Type IV— description				

In the upcoming outline of the elicitation strategies employed in the present study, I shall use Bohnemeyer's (ibid.) taxonomy as point of departure and place the applied strategies in relation to his (ibid.) original types of elicitation techniques. I shall also add one more type to Bohnemeyer's (2015) collection of elicitation techniques, namely 'Elaboration on minimal pairs'.⁶⁹

Before we take a closer look at the elicitation frames employed in the present study, it is worth noting that to ensure the quality and validity of the data, a variety of elicitation frames are ideally employed. Nevertheless, the appropriate choice of elicitation frames depends on various factors. One of these is the research question, e.g. whether the study is focused on how a certain meaning is expressed in the l.u.d. or on what an expression in the l.u.d. means. It also depends on how much the researcher already knows about the expression under investigation. The appropriate choice of elicitation frame also depends on the preferences of the individual consultant. Some people have long experience with translation work and may thus prefer that part of the task involves a sentence to be translated into the l.u.d. Others may prefer to share their knowledge about their

⁶⁹ Thanks to Lawrence Kaplan (p.c. 2011) for suggesting this technique to me.

language through descriptions of situations where a given sentence can be appropriately uttered along with detailed reflections on the nuances of meaning the given utterance conveys in that situation.

The present study has made use of two types of elicitation frames that rely on translations. These are rendered as Frame A and Frame B:

Frame A: Translations (Bohnmeyer's Type II)

Uummarmiutun → English

Stimulus: Uummarmiutun sentence⁷⁰

Target response: English translation

English → Uummarmiutun

Stimulus: English sentence

Target response: Uummarmiutun translation

Frame B: Translations in context (Bohnmeyer's Type III)

English → Uummarmiutun

Stimulus: English sentence + Context

Target response: Uummarmiutun translation

As noted in the previous section, translations are clues about linguistic meaning, and when the target response is a translation, the stimulus may well include a context in order for the researcher to know which meaning is being translated (Matthewson, 2004; Bohnmeyer, 2015; Cover, 2015). The context used in the stimulus may be an imaginary scenario, or it may be inspired by real world scenarios or by stories mutually manifest to consultant and researcher, e.g. as in (4.1):

⁷⁰ The Uummarmiutun words and sentences used as stimuli were either 1) picked from the Uummarmiutun grammar (Lowe, 1985a) or dictionary (Lowe, 1984), 2) constructed by the researcher on the basis of these and checked for grammaticality with consultants, 3) given by consultants as answers to other stimuli during the interviews, or 4) constructed by a consultant asked to make a sentence with a certain expression or word. Uummarmiutun is highly polysynthetic, and a verbal word constitutes a whole sentence. Consultants were therefore usually asked to make the sentence longer with a verbal word as point of departure.

(4.1)

Before the interview, the consultant J told the interviewer S about his grandfather. When J was a kid, his grandfather would always tell him to get all the chores done first and then he could go and play.

S: So how would your grandfather say to you: you have to sew, no .. you have to saw first ? You, you have to, you gotta finish this work, and then you can go and play. How, how would he say that in Inupiatun?⁷¹

J: uhhh .. hanaiqqaafutin. Hanaiqqaarutin piuraarialla^hafutin. It means, get ready first, get everything ready, and then you could go play.

Sentence under discussion:

Hanaiqqaafutin iufaarialla^hafutin

hanai - qqaa - futin piufaaraq - iaq - lla - futin

get.ready - first - IND.2.SG play - go.and - lla - IND.2.SG

‘You get ready first, then you could go out and play.’

Frame B is especially good for investigating how certain meanings are expressed in the l.u.d., since the stimulus consists of a meaning restricted by the metalanguage sentence and the context, and the target response consists of a sentence in the l.u.d. which expresses the target meaning. It is of course important to be aware that a context cannot be described fully, and the consultant may fill in missing details that turn out to be the factors licensing the l.u.d. sentence she gives as translation. This pitfall can be mitigated by talking about the context and the response after the response has been given, by asking follow up questions and listening carefully to further elaborations. It should also be noted that not everybody is comfortable translating into the l.u.d. Some prefer to translate from the l.u.d. into the metalanguage or to explain the meaning of l.u.d. sentences by means of describing scenarios where the sentence can be used (see Frame F below). Working with the same consultants over a period of time allows the researcher to become aware of which frames each consultant prefers to work with and thereby to prepare better for interviews by forming interview guides in accordance with individual preferences.

The present study also employed another slightly different variant of Frame A and B, where the researcher asked the consultant to translate a mini-dialogue targeting the intended meaning.⁷² This method is a good alternative when the researcher wishes to test a sentence in a complex discourse context. By constructing a dialogue, the researcher can fix details in the context without

⁷¹ Recall from Chapter 2 that some speakers use the name Inupiatun to refer to their language, while others prefer Uummarmiutun.

⁷² Thanks to Christoph Unger (p.c. 2015) for suggesting this technique to me.

the researcher restricts the response by providing an English sentence conveying the target meaning (similarly to frame B). In cases where several communicative intentions apply in a scenario, the consultant may even ask the researcher for a metalanguage sentence to translate because it is unclear which meaning she is aiming at. Another option which is somewhat in between is to still ask the consultant what he would say in the scenario, but restrict the response in terms of topic, e.g. by asking ‘What can you say about what happened to your maktak?’.⁷⁴

(4.3)

- S: Let’s imagine that you uhm .. you just put a plate with maktak on the kitchen table, and then you turn around and you stir in the pot, and you turn around again, and the maktak is gone. And then the only other .. thing .. present in the room is your dog, who’s lying down in the corner. What can you say about what happened to ..
- N: .. to your maktak
- S: Yeah
- N: Qimmira maktautiga niritirniraa⁷⁵ Ya know.. my dog uhm .. how would you say it now? Oh! My dog must have eaten my maktak.
[..]
- S: How did you say that again?
- N: Qimmirma nirilirniraa maktautiga. I was surprised! I got surprised because I was stirring in the xx and I turn around and Taima (‘then’), my maktak is gone.

Sentences under discussion:

Qimmira nirilirniraa maktautiga
 qimmiq - ra niri - liq - niq - raa
 dog - 1.SG.POS.SG eat - quickly - *niq* - IND.3.SG.SUBJ.3.SG.OBJ
 maktak - uti - ga
 whale.skin.with.blubber - supply.of - 1.SG.POS.SG
 ‘Oh! My dog must have eaten my maktak.’

Like Frame B, Frame C is good for investigating how certain meanings are expressed in the l.u.d. And like Frame B, the choice to use Frame C depends on how confident the consultant feels when it comes to constructing sentences in the l.u.d.

Two types of judgment tasks were also employed. These are presented in turn below:

⁷⁴ Thanks to Maren Berg Grimstad and Ragnhild Eik (p.c. 2015) for suggesting this strategy to me.

⁷⁵ N appears to settle for the word nirilirniraa rather than niritirniraa, i.e. she seems to prefer a word containing the form *liq* rather than *tiq*. In MacLean’s (2014: 504, 691) dictionary, *liq* and *tiq* are both described as ‘quickly’.

Frame D: *Judgment of utterance in context (Bohnmeyer's Type V)*

Stimulus: Context + Uummarmiutun sentence

Target response: Judgment

Judgments are, as Bohnmeyer (2015) puts it, “[...] *metalinguistic utterances that may comment on a variety of properties of linguistic stimuli: their grammaticality, interpretability, idiomaticity, stereotypicality, pragmatic appropriateness* [...]” (ibid.: 34). In the case of syntactic, morphological or phonological fieldwork, this type of elicitation technique will probably employ a stimulus consisting of a sentence in the target language alone. In the case of semantic elicitation, however, the stimulus often contains a context or an example of a communicative intention in relation to which the target language sentence can be judged.⁷⁶ (4.4) below is an example of elicitation of a judgment of a sentence in a context:

(4.4)

S: Let’s imagine that we are going to see an old friend, so we are going to his house. And then we come there, and the house looks abandoned. It’s empty, and it seems like there is nobody there. And that’s very strange. And then I say nuullaŋuq

N: (shakes head)

S: No? I don’t say..

N: No.

S: How is uhhh, what makes it strange, that word in that

N: Nuullaŋuq ?

S: Yeah?

N: You’re telling that person you shou.. He or she could move, out of there. Move to another house.

Sentences under discussion:

Nuullaŋuq

nuut - lla - ŋuq

move - lla - IND.3.SG

‘He could move’

Frame D is good for testing hypotheses about what a certain expression in the l.u.d can and cannot be used to express. Especially negative data may be obtained through the employment of Frame D, as long as the researcher makes use of follow up questions when necessary. As pointed out

⁷⁶ Bohnmeyer (2015) only lists ‘Target language utterance’ as a stimulus for Type V in his table, but he clearly appreciates that ‘Content of a linguistic representation’ is often part of the stimulus as well in judgment tasks used in semantic elicitation.

throughout the literature on semantic fieldwork methods (e.g. Matthewson, 2004; Bohnemeyer, 2015; Deal, 2015), a sentence may be rejected in a context for several reasons, not all of them having to do with semantics in the sense of encoded (stable) meaning. The sentence may for instance be ungrammatical or even pronounced wrongly, or it may be true but pragmatically unsuitable in the given context. All these factors may lead to the consultant rejecting the sentence in the given context, but it should not lead the researcher to conclude that the rejection is necessarily due to the semantics of the sentence. This is where follow up questions are crucial; the researcher needs to determine why the sentence is rejected. Judging from N's response to why *nuullaŕuq* 'he move-*lla*' is strange, it appears that this indeed has to do with meaning rather than e.g. morphosyntax, in that she answers by explaining the correct meaning of the sentence.

Judgment tasks in semantic elicitation may but need not include a context in the stimulus. Frame E below is different from Frame D in that the stimulus does not involve a context:

Frame E: Judgment of sentence without context (Bohnemeyer's Type V)

Stimulus:	Uummarmiutun sentence
Target response:	Judgment

The acceptance or rejection of certain combinations of expressions may provide hints about the meaning of the parts. The technique is appropriately used when the intention is to test an expression for certain meaning properties. Given the Uummarmiutun dictionary (Lowe, 1984), it may be hypothesized that *yumaaq* 'plan, intend to' is restricted to volitional meaning. One of the ways to test such hypothesis is to check if *yumaaq* may be used in combination with a verb stem expressing an undesirable event, such as *paya-* 'to starve'. The idea is that people generally do not intend or plan themselves or others to starve. Therefore, if *payayumaaqtuq* 'he starve-*yumaaq*' is rejected, the hypothesis about a volitional component in *yumaaq* can be maintained, whereas the acceptance of *payayumaaqtuq* 'he starve-*yumaaq*' would challenge the hypothesis that *yumaaq* is restricted to volition. As it appears, *payayumaaqtuq* 'he starve-*yumaaq*' is accepted and explained as yielding an interpretation free from aspects of volition:

(4.5)

S: Payayumaaqtuq ?

J: Payayumaaqtuq, he's gonna starve. Payayumaaqtuq .. Oh! No. Payayumaaqtuq... because is not good hunter, is sick or .. he's gonna starve. Payayumaaqtuq. [...] You gotta help him. Everybody, anybody in uh .. in the Delta when they heard that that guy is gonna starve, they go.

Sentence under discussion:

Payayumaaqtuq

paya - yumaaq - tuq

starve - *yumaaq* - IND.3.SG

'He is gonna starve.'

Another useful technique that may be employed, especially in the study of modal expressions, is to ask for judgments of sentences where the modal under investigation occurs in a syntactic environment assumed to be either appropriate or inappropriate given a) the suspected meaning, and b) observations pertaining to this type of meaning cross-linguistically and/or in neighboring dialects and languages. Cross-linguistically, epistemic modals scope higher than root modals, and these respective properties may be reflected in differing morphosyntactic restrictions (e.g. Boye, 2005; 2012b). In Inuktitut, the type of meaning expressed by the postbase tends to affect which slot it occupies in relation to other postbases in the verbal word (Fortescue, 1980). As it appears from Fortescue (ibid.: 261, 272), affixes expressing epistemic meaning occur closer to the verb ending than affixes expressing root modal meaning (see Chapter 2, §2.4.1 for details). Say we want to test whether the Uummarmiutun expressions *hungnaq* 'probably' and *yumiñaq* 'to be permissible, possible for one to; may, could' are restricted to epistemic and root modal meaning respectively. The prediction is that if *hungnaq* allows epistemic modal interpretations only, and *yumiñaq* allows root interpretations only, then *yumiñaq* can precede *hungnaq* in a verbal word whereas *hungnaq* cannot precede *yumiñaq*. And this is exactly what we find, given the judgments from the Uummarmiutun speakers consulted for the present study (see Chapter 5, §5.2.8 and §5.3.2.3 for details):

(4.6)

a. Accepted

yumiñaq + *hungnaq* Aniyumiñarungnaqtuq
ani - **yumiñaq** - **hungnaq** - tuq
leave - may/can - maybe - IND.3.SG
'Maybe he could go out' (maybe he's not crippled)

b. Rejected

hungnaq + *yumiñaq* * Tunihungnarumiñaraa
tuni - **hungnaq** - **yumiñaq** - tuq
sell - maybe - may/can - IND.3.SG.SUBJ.3.SG.OBJ

Throughout the interviews, consultants were also asked to freely describe contexts for Uummarmiutun sentences containing the expressions under investigation:

Frame F: *Context for utterance (Bohnenmeyer's Type VI)*

Stimulus: Uummarmiutun utterance

Target response: Description of scenario

In this elicitation frame, the interviewer provides a sentence in the target language and asks the consultant to describe a situation or scenario where he would utter this sentence to another speaker of the language. (4.7) below is an excerpt from a conversation where interviewer S asks consultant N a) whether certain words exist in the language, and if so b) to describe scenarios where these words can be used:

(4.7)

S: Utirumiñaqtuq ?

N: Yeah! There is. Utirumiñaqtuq uhhh ... Utirumiñaqtuq. If you kick somebody out. And you're telling somebody else, 'Yeah. He could come back'. 'He could come back' .. if you see him tell him he could come back.

Sentence under discussion:

Utirumiñaqtuq
utiq - yumiñaq - tuq
come.back - *yumiñaq* - IND.3.SG
'He could come back.'

After hearing this description, the researcher may ask follow up questions where she changes the scenario slightly and asks the consultant if he could also say the sentence in this modified scenario (i.e. uses Frame D). Frame F is especially good for inspiring the consultant to elaborate on the intuitive meaning nuances he associates with the sentence under investigation. While not everybody prefers to explain their language through scenarios, others paint elaborated scenarios in their responses to Frame F and reflect extensively on the subtle meaning nuances associated with the given expression by continuing the description and comparison of different scenarios where the sentence may fit.

Another type of question that facilitates detailed elaborations is Frame G:

Frame G: Elaboration on minimal pairs

Stimulus: Two Uummarmiutun sentences forming a minimal pair

Target response: Elaboration on their difference

Employing Frame G, the researcher asks the consultant about the difference between two sentences in the target language that form a minimal pair. At least one of the sentences contains an expression under investigation, and the consultant then chooses to provide translations of the respective sentences or to describe scenarios. For reasons made clear throughout the present chapter, responses consisting of scenarios are especially valuable. Frame G is not among the combinations of stimulus and target response listed in Bohnemeyer (2015). It was suggested to me by Lawrence Kaplan (p.c. 2011) as a way of inspiring consultants to share reflections on the arguably very subtle meaning nuance that a speaker of North Slope Iñupiaq may convey by means of including the postbase *niq* in her sentence. The technique is employed in Berthelin (2012). Throughout the data collection on the semantics and pragmatics of *niq*, it turned out that the meaning contributed by *niq* to the utterance interpretation was very hard to identify based on the pairing of scenarios and sentences with *niq*. However, when consultants elaborated on the differences between a sentence with *niq* and the corresponding simple sentence, it became clear that while both sentences were often appropriate in the same contexts, the postbase *niq* could be used to add an aspect of affirmation or surprise:

(4.8)

A: I think either one is .. miquǵniqsutin! Or miquqtutin! It can go either, but uhm.. If you are really surprised, cause he has never really sewn much, you would say miquǵniqsutin!

Sentences under discussion:

Miquǵniqsutin	miquqtutin
miquq - niq - tutin	miquq - tutin
sew - niq - IND.2.SG	sew - IND.2.SG
‘You are sewing!’ (surprise)	‘You are sewing!’ (see Berthelin, 2012: 61)

Frame G is also employed in the present study. (4.9) below shows how one of the responses to such a question helped the researcher understand the difference between the *niq* and *hungnaq*, which were suspected to express different epistemic strengths. As can be seen from N’s elaboration, *hungnaq* is associated with less certainty than *niq*:

(4.9)

S: Ugiarungnaqtuq ?

N: [...] You hear two dogs barking Araa! Ugiarungnaqtuq, qimmira ugiarungnaqtuq. You go out and check.

S: uhhh, and that was ugiarungnaqtuq

N: Yeah, ugiarungnaqtuq, cause you could hear two dogs fighting outside and Araa qimmira ugiarungnaqtuq

S: Ooooh! And what if you say uriarniqhuq⁷⁷

N: Ugiarniqhuq, you see it already that he’s fighting. He’s already.. you go outside and you see it [...] Araa taikka qimmira ugiarniqhuq! My dog is Taikka .. he’s over there fighting another dog. You see it. You see it. And when you say ugiarunganaq.. ugiarungnaqtuq is you hear it inside. And you don’t even know if he’s fighting or not.

Sentences under discussion:

Araa! Ugiarungnaqtuq, qimmira ugiarungnaqtuq		
araa	ugiaq - hungnaq - tuq	qimmiq - ra ugiaq - hungnaq - tuq
oh.my!	fight - <i>hungnaq</i> - IND.3.SG	dog - 1.SG.POS.SG fight - <i>hungnaq</i> - IND.3.SG
‘Oh my! He’s fighting- <i>hungnaq</i> .’	‘My dog is fighting- <i>hungnaq</i> ’	
Araa taikka qimmira ugiarniqhuq!		
Araa	taikka	qimmiq - ra ugiaq - niq - tuq!
Oh my!	over.there	dog - POS.1.SG fight - <i>niq</i> - IND.3.SG
‘My dog is over there fighting!’		

⁷⁷ I mispronounce ugiarniqhuq as ugiarniqhuq, and N corrects the word to ugiarniqhuq.

A different version of the minimal pair frame is to ask the consultant to choose among the two sentences in relation to a context.⁷⁸ As can be seen in (4.10), such a question may inspire the consultant to share insights into subtle differences in the meanings of the respective words:

(4.10)

Scenario: Simon knows a lot about whaling, and there’s a big whaling meeting tomorrow. Is one of these sentences appropriate: *Simon uqakihifuq* (‘Simon speak-*khi*’) or *Simon uqaqtukfaufuq* (‘Simon speak-*fukfau*’)⁷⁹

L: Okay if uhm .. if we’re gonna choose somebody to talk for us, then Simon uqaqtukfaufuq. He’s the one to speak. And then this Simon uqakihifuq, it’s just uhm, ‘Simon will speak’.. you know – on his, not, not for .. just from himself. But us we want him to speak, so we say Uqaqtukfaufuq. He’s gonna speak on our behalf. [...] And us, we want him, cause we don’t know how to speak that well, or – you know – we want someone who could speak really well with much knowledge. So we choose Simon. Uqaqtukfaufuq.

Sentences under discussion:

Simon uqakihifuq	Simon uqaqtukfaufuq
Simon uqaq - <i>khi</i> - tuq	Simon uqaq - <i>fukfau</i> - tuq
S. speak - FUT - IND.3.SG	S. speak - <i>fukfau</i> - IND.3.SG
‘Simon is going to speak’	‘Simon is going to/should speak’

The usefulness of Frame G may vary. As Matthewson (2004) points out, comparison of sentences may yield a response consisting of abstract generalizations, which are, as argued above, only clues rather than results, as we generally do not have direct access to the abstract rules and generalizations we employ when we speak our language (Matthewson, 2004; Deal, 2015). It is nevertheless my experience that at least some consultants tend to get inspired to elaborate on the intuitive meaning differences among linguistic expressions when asked to compare sentences forming a minimal pair. It is likely that Frame G is especially valuable to the study of abstract expressions like modals and non-truth-conditional expressions like *niq* whose meanings are often hard to identify for the speaker as well as for the researcher.

A slightly different version of Frame G, which was only employed on very few occasions, is to present the consultant with a scenario where person A utters a sentence consisting of a proposition p modified by an epistemic expression and person B utters a sentence consisting of the

⁷⁸ For such data to be valid, the researcher obviously has to make sure that the consultant is comfortable letting her know if none of the suggested sentences are appropriate in the scenario (see discussion in §4.2.3).

⁷⁹ The consultant was only presented with the Uummarmiutun sentences, not the material in the brackets.

proposition *q*. The consultant is then asked whether she would act according to person A's utterance or person B's utterance. The idea is that a person would choose to believe and act in accordance with the information presented with the highest epistemic strength. However, people may also prefer to believe and act in accordance with the propositional content they find most likely to be the case regardless of the epistemic expressions employed by the speaker.⁸⁰ It is difficult to determine if a given sentence is chosen due to its epistemic strength, or due to its propositional content. This may though be determined on the basis of follow up questions. In the present study, it turned out that the content of the propositions tended to play a bigger role in the consultants' choice of which statement they would act on. Most responses obtained through this version of Frame G did thereby not shed light on the epistemic strength of the expressions under investigation, and for this reason it was rarely employed in the present study.

4.2.3 Possible concerns with the employed method

This section addresses two possible concerns that may be raised with regards to the methodology applied in the present study. These are 1) possible issues with the validity of elicited speaker judgments in general, and 2) possible issues pertaining to the use of a metalanguage.

As for speaker judgments and elicitation in general, it may be objected that a speaker's judgment of whether or not a sentence can be used in a given context does not necessarily equal information on whether or not she herself would indeed use that sentence in such a context. That is, a person's judgment of language use may differ from her own actual language use or that of other members of the speech community. This could be an argument for using spontaneous speech production rather than elicited data for semantic and pragmatic analysis. Research based on spontaneous speech is extremely valuable, but there is no way around the fact that the collection, transcription and translation of such data is very time consuming (Chelliah and de Reuse, 2011) and the result may turn out not to contain sufficient data on the phenomenon under investigation to justify the time, effort and resources spent. Elicitation, on the other hand, allows the researcher

⁸⁰ To pick an extreme example, imagine that one person says *John might be home*, and the other person says *John is on the moon*. You may choose to believe that John is home due to the unlikeliness that he is on the moon, even though this proposition is presented linguistically with lower epistemic strength through the use of *might* in *John might be home*.

to target the phenomenon under investigation and thereby to test hypotheses systematically and rigorously.

The validity of elicitation as a method rests on the assumption that speakers of a language know when a sentence can and cannot be used, which is – in my view – a reasonable assumption since they know how to use their language for communication. Having said that, there are two crucial things that the researcher needs to keep in mind in order for the collected speaker judgments to be valid as data points. She must prepare questions that target the consultants' knowledge of language use rather than abstract generalizations, as the latter are generally not directly accessible to us as language users, as argued in Matthewson (2004) and §4.2.1 above. Moreover, she must make sure that the consultants are comfortable with rejecting sentences they find inappropriate. For instance, if the researcher erroneously has given the impression that she is interested in standardized language use, the consultants might share knowledge in line with language ideology rather than their own language use. The only way around this is for the researcher to make it clear that she is interested in learning how *the consultants* use their language.

Also pedagogical philosophies may affect whether the consultants are comfortable with rejecting inappropriate sentences. It is a general trend that native speakers of a language may be more likely to accept a less correct sentence from a language learner in order to avoid discouraging the learner. A non-speaker linguist who asks a consultant 'Can I say X?' is therefore more likely to get a positive answer even if the sentence is odd, than if the question had been 'Can you say X?'. As the reader will note in the data chapter, some of the collected data are elicited though the question 'Can I say X?', which is obviously less optimal. On the other hand, it is important to note that the speakers consulted for the present study were generally comfortable with rejecting sentences even when the question had the structure of 'Can I say X?', e.g. as in (4.4) in §4.2.2 above and in (4.11) below:

(4.11)

S and J have talked about other sentences in a scenario where a picture is going to fall down from the wall:

- S: [..] can I also say .. katagumaaqtuq ?
J: Yeah.
S: Yeah?
J: uhhh .. future. [..] That picture is gonna fall.
S: Katagumaaqtuq ?

J: Yeah.
S: And can I also say *katagumafuq* ?
J: ... No

Sentence under discussion:

Katagumaaqtuq
katak - yumaaq - tuq
fall - *yumaaq* - IND.3.SG
'It [=the picture] is gonna fall.'

Moreover, consultant J was very particular with correcting my pronunciation of the Uummarmiutun sentence under investigation to perfection before moving on to answering the question about its meaning. There is hence reason to believe that the consultants working on the present project reject sentences they find inappropriate even when asked whether the non-speaker interviewer can use the sentence under discussion.

The semantic elicitation employed in the present study makes use of stimuli presented in a metalanguage different from the language under investigation. That is, the description of discourse contexts, follow up questions etc. are done in English rather than in Uummarmiutun. This could raise the concern that the use of English may affect the responses such that the consultants e.g. give Uummarmiutun sentences that mimic the structure of English. According to Matthewson (2004), the danger of the metalanguage affecting the responses is minimal if present at all; her experience shows that consultants do not tend to transfer the linguistic structure of the metalanguage into the l.u.d. responses. It should be noted that Matthewson's (2004) examples mainly support the argument that *grammatical* structures are not transferred from metalanguage to l.u.d. It is not known exactly to which degree semantic structures tend to be transferred from metalanguage to l.u.d. Even though the use of a metalanguage other than the l.u.d. could affect the responses, this risk is hardly greater than the downsides of conducting the interviews in a language the interviewer does not master fully. If descriptions of discourse contexts are the stimuli, then these must be accurately described. Even if the discourse contexts are translated into the l.u.d. before they are presented to the consultant, the researcher will still need to understand the elaborations and explanations that occur along with the acceptance or rejection of the sentence and thereafter identify appropriate follow up questions on the fly. If this is done in a language the interviewer does not master fully, this is obviously done at the expense of mutual understanding between

consultant and researcher which decreases the validity of the data (see Matthewson, 2004: 394-5; Anderbois and Henderson, 2015: 215).

One way to eliminate any concern that the metalanguage may influence the responses is obviously to make use of non-linguistic stimuli such as videos or pictures targeting the meanings under investigation. An example of a non-linguistic stimulus is the children's book "Where is the Frog?" which has been used to elicit spatial vocabulary (see e.g. Sakel and Everett's (2012) guide to linguistic fieldwork). While this technique must be supplemented with follow up questions in order to obtain negative data, the use of visual stimuli is a valuable technique. However, the design of non-linguistic stimuli that target modal meanings may be more challenging, as these pertain to abstract notions of degrees of certainty and the possible and necessary actualization of events. Such meanings, as well as other abstract meanings like tense and aspect, are arguably more difficult to illustrate visually than e.g. spatial relations are.

A type of non-linguistic stimulus that may be used for eliciting modal meanings is 'storyboards' (Totem Field Storyboards, 2010-2017). A storyboard consists of pictures of a series of events that lead up to an event which is reasonably assumed to be appropriately conveyed by means of a sentence containing the type of expression under investigation.⁸¹ The researcher and consultant go through the picture story a couple of times, and then the consultant narrates the story in the l.u.d. This method does thus require some discussion of the story in the contact language (Burton and Matthewson, 2015), as the story may not be entirely evident from the pictures in and of themselves. However, when the consultant narrates the story, she relies on the pictures, and the difference in naturalness between stories narrated on the basis of story boards and other stories is judged to be minimal or none by third parties (see *ibid.*). Critique of the storyboard method pertains in my view to logistics rather than to validity. In connection with the present study, two stories were elicited with storyboards as stimuli. Very few of the expressions under investigation came up, and the finding only confirmed what was already known about the expressions on the basis of the dictionary and already collected data. It was therefore decided that the method was too time and resource consuming to be worthwhile in the present study. The available time and resources were therefore devoted to good quality elicitations and to consultants' elaborations and reflections on the meaning and use of sentences in their language.

⁸¹ The reader is encouraged to visit www.totemfieldstoryboards.org to see examples of available story boards and for instructions on how to use and build their own storyboards.

4.3 Participants, interviews and data processing

4.3.1 Participants and interviews

The knowledge about Uummarmiutun presented in this thesis belongs to Panigavluk, Mangilaluk and the late Kavakluk. Our meetings took place in Inuvik in the fall of 2014 and the fall of 2015. At that time, Mangilaluk and Panigavluk were in their mid 70s and Kavakluk was in her late 50s. Mangilaluk and Panigavluk are brother and sister and they grew up speaking Uummarmiutun. Kavakluk relearned her language as an adult. Panigavluk has worked with and for her language since she was a teenager, among other things as an interpreter, teacher and language consultant. Mangilaluk has long experience as a translator and as a reporter for the Inuvialuit Communication Society where he would, among other things, cover events in Uummarmiutun. Kavakluk taught the Inuvialuktun-immersion kindergarten class for many years as well as evening classes for adult language learners in Inuvik. In 2011 she received the prime Minister's Award for Teaching Excellence. Kavakluk was a very popular and beloved teacher. Also Agnagullak and Suvvatchiaq have contributed with knowledge to the present study. Agnagullak and Suvvatchiaq speak a dialect of Uummarmiutun which they associate very closely with the North Alaskan Iñupiaq dialect. The main focus in the data chapter is on the knowledge shared by Panigavluk, Mangilaluk and Kavakluk who all identified their language with Uummarmiutun. Last but not least, Mimirina has kindly shared her knowledge about Siglitun. This has facilitated the comparisons between Siglitun and Uummarmiutun in the next chapter. In the event of misinterpretations of the knowledge shared by Panigavluk, Mangilaluk, Kavakluk, Agnagullak, Suvvatchiaq and Mimirina, these are entirely my own. In order to secure anonymity, the person sharing the knowledge in the respective quotes is not identified. Rather, a random initial letter is assigned to each of the consultants, and feminine and masculine pronouns are used randomly.

The interviews for the present study took place in a face-to-face setting. As Schilling (2013: 67) observes, respondents may well give more than one response to an elicitation in person but probably not on paper. Furthermore, data-collection methods without face-to-face interaction may complicate clarification of the elicitation questions as well as the answers (see Schilling, 2013: 67; Bochnak and Matthewson, 2015: 5). Because linguistic meaning is subtle, and modal meaning is highly abstract, the detailed elaborations and explanations offered by the consultants during our

interviews have ensured the level of detail necessary for my understanding of what the various expressions mean. As will be clear in the next chapter, it became necessary to ask a couple of follow up questions via email after the fieldwork was completed in order to clarify details necessary for the analysis. The data resulting from email interaction are marked as such.

4.3.2 Analysing and rendering the data

All interviews were transcribed, and discussions of the respective expressions under investigation were collected in separate documents reserved for one expression each. All data pertaining to the respective expressions have been analyzed and they are all used to inform the hypotheses and conclusions in the thesis, although not all data are presented in the text. It would be cumbersome and hardly informative to present all data collected on each expression. The next chapter therefore contains data points which are picked out to represent the various properties, tendencies and patterns emerging for the respective expressions, and any data that could challenge the hypotheses are also included and discussed. The data set is qualitative in nature, and no attempt is made to quantify the responses or measure frequency of types of interpretations for a given expression. However, when tendencies do appear – e.g. when a certain interpretation is frequently associated with a given postbase – these are pointed out.

As the reader will note, the analyses performed in the next chapter make use of descriptions of cognates in other Inuit dialects when these shed light on the meaning properties of the Uummarmiutun expression under investigation, and when notable differences between the dialects occur. Especially descriptions of North Slope Iñupiaq, Siglitun and Utkuhikšalingmiutut are consulted in order to understand the meanings of Uummarmiutun modals. North Slope Iñupiaq is so closely related to Uummarmiutun (recall Chapter 2⁸²), that it is reasonable to assume that cognates in these two dialects have similar meanings unless otherwise is indicated by the Uummarmiutun data. As pointed out in Chapter 2, Siglitun is spoken in an area overlapping with the area where Uummarmiutun is spoken, and it is therefore likely that this language contact situation results in similarities between the meanings of cognates in the respective dialects. Utkuhikšalingmiutut is a sub-dialect of Natsilingmiutut spoken in the Central Arctic (see Figure

⁸² See §2.3.1 for details on linguistic affiliations and §2.3.2 on similarities and differences among Inuktitut dialects.

2.1, §2.3.1). The level of detail in Briggs, Johns and Cook's (2015) Utkuhikšalingmiutut postbase dictionary makes it possible to use their work to gain insight into the meanings of the Uummarmiutun modals as well as to discover differences between the two dialects. When a datum concerns a dialect other than Uummarmiutun, this is explicitly stated.

The data points presented in the thesis are quotes from the conversations between consultants and interviewer. This choice to use quotes from the interviews is not the standard way of presenting data points in the linguistics literature where semantic fieldwork is used as a method. The standard practice seems to be to render the sentence under discussion, the scenario in relation to which it is judged plus a comment from the consultant when applicable. In the literature on semantic fieldwork methodologies, some direct quotes from elicitation sessions do occur (see Cover, 2015: 249) however for pedagogical reasons, e.g. in order to show what a semantic fieldwork interview may look like. The use of quotes from the interviews as data points in the present thesis is intended to increase transparency, in that it allows the reader to see exactly what the consultants have said about the meaning of the sentences in their language which led to the various analyses and conclusions regarding the semantics and pragmatics of the expressions under investigation (see also Cover and Tonhauser, 2015, who call for more transparency with regards to what consultants have said in the interviews).

In the present study, neither the consultants nor the researcher speak standard varieties of English; the consultants speak the Delta English dialect, and I am myself a second language speaker of English with Danish as my native language. No attempt has been made to standardize our language use in the quotes. Correcting the English used to render my questions would disguise the stimuli and hence leave the data less transparent. Interdialectal translations of the consultants' responses would disguise the knowledge they have shared, as it would not be possible to see exactly how they have chosen to explain the subtle meaning nuances of the expressions under investigation.

Throughout the thesis, the Uummarmiutun sentences under discussion are presented in annotated form underneath the quote where they are discussed, as demonstrated in (4.12) below. The glosses and segmentation are based on a) Lowe's Uummarmiutun dictionary (1984) and grammar (1985a), b) the translations provided by the Uummarmiutun consultants working on the project and c) MacLean's (2014) comprehensive North Slope Iñupiaq dictionary. N, L and J refer to the respective consultants, and S refers to the interviewer. Postbases which are salient to the discussion of the given datum are marked in bold:

(4.12)

S: Could they also say *Ii, tikitchungnaqtuq* ?

L: They could say it like that, ‘He must have reached’. Nobody called us or nobody radioed us, *Tikitchungnaqtuq*, ‘He must have got there’. Otherwise we would have heard other, – you know – other uhhh .. something different.

Sentence under discussion:

Ii, tikitchungnaqtuq

ii tikit - hungnaq - tuq

yes arrive - *hungnaq* - IND.3.SG

‘Yes, he must have got there.’

The translations provided underneath the annotation correspond to the translation or meaning the consultant associates with the given sentence in that datum. Some of the data are quotes from conversations about the suitability of an Uummarmiutun sentence in relation to a discourse scenario rather than in relation to an English translation (Elicitation Frame C, Chapter 4). In many of those cases, neither the consultant nor the interviewer proposes an English equivalent of the Uummarmiutun sentence. In those cases, a translation of the predicational content in the scope of the expression is provided in the tier under the gloss rather than a translation. In those cases, a sentence like *tikitchungnaqtuq* will for instance be accompanied by the translation ‘he arrive-*hungnaq*’ rather than a translation into a full English sentence. When necessary, the conversation between consultants and interviewer prior to the quoted datum is summarized e.g. as in (4.1) above. Inaudible material in the recording is rendered as xx in the transcription as in (4.3) above. When speech overlap, the overlapping segments are indicated with [] as in (4.13):

(4.13)

S: Cause I think this is very interesting here when to use *hungnaq* and when not to, and it seems you have to be very [very] ..

J: [certain]. Certain. Because I heard it from Elder, *Utiqtuq*. You, *Utirungnaqtuq*, because I kind of doubt your story.

Unless otherwise specified, ‘speaker’ is used in the descriptions of the data to refer to the imagined speaker of the sentence under discussion.

Chapter 5:

Uummarmiutun modals – data and description

5.1 Introduction

5.1.1 Overview of the chapter

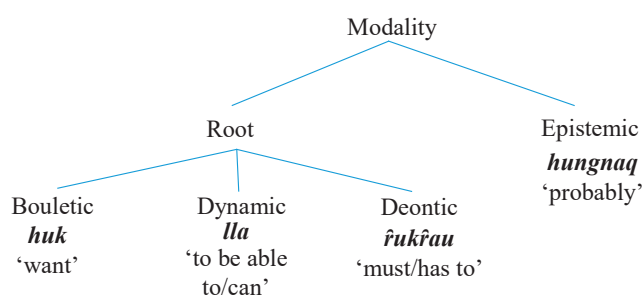
The chapter contains systematic presentations and analyses of the data collected for the present study. The data has the shape of quotes from semi-structured interviews with native speakers of Uummarmiutun. The methodology we used was outlined and discussed in Chapter 4.

The chapter is divided into two main parts. First, §5.2 employs the definition of modal meaning presented in Chapter 3 in order to determine for a set of Uummarmiutun expressions whether or not they are modal expressions. Among the expressions under investigation, the postbases⁸³ *řukřau* ‘must, has to’, *hungnaq* ‘probably’, *huk* ‘to want to’ and *lla* ‘to be able to, can’ turn out to display meaning properties which contribute each in their own way to the discussion of what a modal expression is or how various modal meanings are appropriately reflected in semantic proposals. The other main part of the chapter, §5.3, presents and discusses the data pertaining to these four expressions to identify their exact meaning properties. Those findings will be used as a basis for proposing a full semantic and pragmatic account of *řukřau* ‘must, has to’, *hungnaq* ‘probably’, *huk* ‘to want to’ and *lla* ‘to be able to, can’ in Chapter 7. The four modals moreover provide a good basis for testing and adapting a framework intended to capture the semantics and pragmatics of modal expressions: judging from the dictionary entries (Lowe, 1984), these four

⁸³ See Chapter 2, §2.4.1.

expressions seem to represent the various modal type categories in the literature; *hungnaq* seems to be epistemic, *huk* seems to be bouletic, *řukřau* seems to be deontic, and *lla* seems to be dynamic. This is represented in Figure 5.1 below:

Figure 5.1: Modal types



The present chapter is mainly descriptive. Some linguistic theory and considerations of related phenomena in other languages are nevertheless included in order to a) facilitate the investigation of relevant properties of the Ummarmiutun expressions, and b) clarify how the choice of research questions are intended to yield results that contribute to the existing knowledge of modality.

5.1.2 Expressions under investigation

The expressions that will be checked for modal meaning properties are all picked from the Ummarmiutun dictionary compiled by Lowe (1984) on the basis of whether the entry therein – or a description of a cognate in North Slope Iñupiaq or Siglitun – suggests that the given expression has modal meaning. As argued in Chapter 3, modality is appropriately understood as ‘unrealized force-dynamic potential’ (Boye, 2005). The definition, which is originally from Boye (ibid.), is repeated here for convenience (see Chapter 3, for discussion and details):

Definition of modality

‘Modality’ is meaning which is appropriately conceived of as unrealized force-dynamic potential. Modal meaning evokes the idea of a source, which produces a force pushing an agonist towards a goal (see Boye, 2005).

A modal expression is a linguistic form, which lexically encodes modal meaning as defined above. This means that expressions that may be used to convey modal meaning only in certain contexts, i.e. through implicatures, will not be categorized as modal expressions in the present study (see Chapter 3, §3.2.1). The definition of a modal expression is repeated here from Chapter 3, §3.4.1, for convenience:

Definition of a modal expression

A modal expression is a linguistic form which encodes unrealized force-dynamic potential. This means that it evokes the idea of a source which produces a less than full force towards actualization or verification of the predicational content.

The Uummarmiutun expressions that will be checked for modal properties are described as follows in the Uummarmiutun dictionary (Lowe, 1984):⁸⁴

Enclitics

luuniin 'Or, either ... or' (Lowe, 1984: 129)

kiaq 'Perhaps, maybe, I wonder...' (Lowe, 1984: 115)

guuq / ruuq 'Reported or repeated information; this suffix is used when the speaker is reporting something he has heard has happened or thinks has happened, or is repeating something he himself has heard someone else say. Various translations in English are possible, such as: they say that ..., I heard that ..., he said that ...' (Lowe, 1984: 95)

Free form

ahulu 'Maybe, probably' (Lowe, 1984: 233, 240)

Postbases

niq 'Reported information; this suffix is used when the speaker is reporting something he has heard has happened or thinks has happened. It may have various translations in English, such as: apparently, I heard that ...' (Lowe, 1984: 148)

⁸⁴ The postbases rendered as *huknaq* and *tla* in Lowe (1984) are represented orthographically as *hungnaq* and *lla* throughout the thesis, as this is in accordance with the pronunciation and preferences of the speakers consulted during my visits to Inuvik in 2014 and 2015.

<i>yumaaq</i>	‘To be planning to, to intend to’ (Lowe, 1984: 195)
<i>viaq</i>	‘Might (in the sense of potential consequence)’ (Lowe, 1984: 191)
<i>yumiñaq</i>	‘To be permissible, possible for one to; may, could’ (Lowe, 1984: 197)
<i>řukřau</i>	‘Must, has to.’ (Lowe, 1984: 170)
<i>hungnaq</i>	‘Probably’ (Lowe, 1984: 105)
<i>huk</i>	‘To want to’ (Lowe, 1984: 104)
<i>lla</i>	‘To be able to; can’ (Lowe, 1984: 177)

Each section in the chapter is devoted to one expression. Lowe’s (1984) dictionary entry is used as a point of departure and data collected with native speakers of Uummarmiutun are then discussed with the goal in mind of determining whether or not the expression in question encodes modal meaning. Except for *řukřau*, *hungnaq*, *huk* and *lla*, which are the focus of the study, the expressions under investigation are merely checked for modal meaning properties. While the sections on the expressions outside the focus do discuss hypotheses pertaining to semantic analyses, most of these expressions need further research before a thorough semantic and pragmatic account can be proposed. Each section renders what is known about the meaning of the given expression on the basis of the available data and previous descriptions, summarizes what can be concluded with respect to whether or not the expression is modal and identifies questions for future research.

The postbases *řukřau* ‘must, has to’, *hungnaq* ‘probably’, *huk* ‘to want to’ and *lla* ‘to be able to, can’ are examined in greater detail, and their individual sections present and analyze data leading to the identification of the meanings restricted by the given postbase. Each section also addresses descriptive and theoretically motivated research questions pertaining to the specific postbase, which are necessary for providing a full semantic and pragmatic account.

Řukřau is described in Lowe (1984) as ‘must, has to’, and may thereby be a representative for root modals with partial force, more specifically deontic and perhaps dynamic partial force. Since modals in some languages may be used to express epistemic as well as root modal meaning (e.g. English *may* and *must*, see Chapter 3, (3.1)-(3.2)) it is desirable to check *řukřau* for epistemic modal meaning properties. Also, there is a need to check *řukřau* for hearsay evidentiality, as the

ability to express root modal meaning plus hearsay evidentiality is found in German *sollen* (see e.g. Öhlschläger, 1989) and Danish *skulle* (see e.g. Boye, 2012a). It turns out that *řukřau* may sometimes be used to express hearsay evidentiality, and this poses the question whether evidentiality is part of the conventionally encoded meaning of *řukřau*. The present chapter mainly discusses the data with the aim of identifying the meanings covered by *řukřau*. General theoretical discussions of polysemy and the semantic-pragmatic interface are provided in Chapter 6, and Chapter 7 provides the full semantic and pragmatic account of *řukřau*.

The section on *hungnaq* ‘probably’ contains more extensive theoretical discussions than the other sections, as this is necessary in order to interpret the data. Given Lowe’s (1984) description, *hungnaq* is an epistemic modal. Due to the close affinity of epistemic modality and evidentiality – and the extensive debate in the literature regarding the categorical relationship between these two types of meaning (recall Chapter 3, §3.4.2) – the data on *hungnaq* need to be examined carefully in order to determine whether *hungnaq* has evidential properties in addition to epistemic modal properties, and whether there is any indication that *hungnaq* could have evidential meaning only. Another property that makes *hungnaq* interesting to the present study is that *hungnaq* seems to cover neutral as well as partial force (‘possibility’ and ‘necessity’). *Hungnaq* may hence pose a challenge to the applied analytical model to come up with a suitable way of reflecting this in a semantic proposal. Those challenges are discussed in Chapter 6, and the present chapter is mainly concerned with determining whether *hungnaq* is indeed modal and which meanings it covers.

Huk, which Lowe (1984) describes as ‘to want to’, is first of all interesting for descriptive reasons. As Johns (1999) shows, postbases glossed as ‘want’ in other Inuktitut dialects such as Labrador Inuttut and Qairnirmiut are in fact not restricted to bouletic modality or desirability as suggested by a gloss like ‘want’. This poses the need to check the appropriateness of Lowe’s (1984) description of *huk* against the collected data. As we shall see, *huk* has a broader sense than suggested in Lowe (ibid.). Interestingly, not all senses of *huk* appear to be modal, and this opens a discussion of whether the form *huk* is involved in one or more lexical items. The section on *huk* therefore includes some discussion of questions pertaining to lexical structure, which is necessary for interpreting the data.

The last postbase to be examined in detail is *lla* ‘can, be able to’, which is a representative for neutral root force (root possibility) modals judging from Lowe’s (1984) entry. English *can*,

which figures in the dictionary entry for *lla*, can be used to express permissions (deontic possibility) in addition to physical force (dynamic modality), which includes physical abilities as well as intellectual abilities. Uummarmiutun *lla* should hence be checked for the same meanings, and if *lla* covers both, this opens the question on how to account for this polyfunctionality. More specifically, the question is whether the permission uses are best predicted by being reflected directly in the lexical entry or by an account of pragmatic processes. This will be discussed in Chapter 7 (see also the discussions on English *can* in Chapter 6, §6.3.3.3), and the section on *lla* in the present chapter is mainly concerned with presenting the data on *lla* to identify its meaning and use.

5.1.3 A note on terminology

To describe the data, the present chapter makes use of the ‘force-dynamic’ terminology.⁸⁵ Because it is fine grained and well developed, the force-dynamic terminology is especially suitable for performing precise descriptions of the modal (and related) meanings figuring in the interpretations of the sentences containing the expressions under investigation. The force-dynamic terminology has already proven successful in Chapter 3 to define a domain of meaning appropriately labelled modality; the definition of modality as unrealized force-dynamic potential (Boye, 2005) is precise enough to characterize salient properties of the domain of modality, and restrictive enough to distinguish modality from neighboring meanings. It is therefore to be expected that the force-dynamic terminology will a) allow us to determine whether or not a given expression is modal, and b) facilitate precise descriptions of subtle meaning nuances of the various modal and related concepts figuring in the interpretations of sentences containing the expressions under investigation.

In addition to the force-dynamic terminology, the literature on modality employs labels like ‘necessity’ and ‘possibility’ to describe modal forces, and labels like ‘epistemic’ and ‘root’ as well as ‘bouletic’, ‘dynamic’ and ‘deontic’ to describe modal types (see Chapter 3). These terms are useful short hand labels for different groups of modal meanings, and for this reason, they will be employed to some degree in the description of the data along with the more specialized force-dynamic terminology. Appreciating that the vocabulary used for describing modal meanings is

⁸⁵ See Boye (2001, 2005, 2012a) who elaborates Talmy’s (1988) and Sweetser’s (1990) ideas, and Chapter 3, §3.3.4, in the present thesis.

heterogeneous in the linguistics literature, the table below offers an overview of the labels used in the present chapter along with the corresponding labels used in other scholarly works on modal meaning accompanied by examples. The labels employed in the present chapter are marked in bold:

Table 5.1: Terminology for describing modal meanings:

Modal force Modal type		Less than full force	
		Neutral force (modal possibility, compatibility, existential quantification')	Partial force (modal necessity, entailment, universal quantification')
Root force Actualizational force (‘non-epistemic’, ‘circumstantial’)	Physical and intellectual force (Dynamic)	(1a) I <u>can</u> sing.	(2a) I <u>must</u> throw up.
		(1b) She <u>can</u> sleep over there. There is space available.	(2b) She <u>has to</u> move to another place. The roof is falling down.
	Social force (‘Deontic’)	(1c) You <u>may</u> enter the stage, if you want to. It is your turn.	(2c) You <u>must</u> enter the stage now, the audience has paid to hear you sing.
	Volitional force / Psychological force (‘Bouletic’)		(2d) He <u>wants</u> to become a whaler.
Epistemic force / epistemic support		(1d) Peter <u>might</u> be a good singer. He has taken some lessons, but I don’t know if he has any talent.	(2e) Peter <u>must</u> be a good singer. He has practiced since he was a child.
Verificational force			(2f) Peter <u>should</u> be a good singer according to what people say.

5.2 Uummarmiutun expressions with possible relevance to modality

5.2.1 *luuniin*

The meaning of the enclitic *luuniin* is described in the Uummarmiutun dictionary (Lowe, 1984: 129) as ‘or’ or ‘either ... or’. In the examples provided by Lowe, *luuniin* appears on nouns, as in (5.1). As we shall see, the collected data show that *luuniin* may also attach to verbs.

(5.1)

- a. **Unaluuniin**
un - na - luuniin
DEM.EXT.VIS - PRON.DEM.SG.ABS - *luuniin*
'Or this one'
- b. **Umiakunluuniin tingmifualukunluuniin**
umiaq - kun - luuniin tingmufualuk - kun - luuniin
boat - VIA - *luuniin* airplane - VIA - *luuniin*
'By boat or by plane' (Lowe, 1984: 129)⁸⁶

Lowe's (1984) description does not at a first glance suggest that *luuniin* is a modal expression. The North Slope Iñupiaq cognate *luuniiñ*, on the other hand, does appear to be a modal, judging from MacLean's (2014) use of the English neutral force epistemic modal *might* in her dictionary entry: "and then again, one might *V*; and then again, it might have been an *N*" (ibid.: 797). The Siglitun cognate *luuniin* also appears to cover neutral epistemic force given its entry in the Siglitun dictionary: "'either ... or', 'whether ... or' and 'maybe ... (implying choice)'" (Lowe, 2001: 251), where the neutral epistemic modal *maybe* is used. That a linguistic item may encode epistemic uncertainty as well as a notion of polar alternatives is no surprise, given the cross-linguistically attested affinity between neutral epistemic force and polar questions (see Boye, 2012a).

The data collected for the present study suggest that Uummarmiutun *luuniin* may indeed have modal meaning. From (5.2) and (5.3) below, it appears that Uummarmiutun *luuniin* – like its North Slope Iñupiaq (see MacLean, 2014: 797) and Siglitun (Lowe, 2001: 251) cognates – may attach to verbal words, where it appears to modify the whole proposition in its scope:⁸⁷

(5.2)

Scenario: Two friends are talking about their friend Elsa who has moved to Aklavik. Friend 1 is wondering if Elsa will stay there for good. Friend 2 says that Elsa likes Aklavik, so maybe she will not move back to Inuvik, but she likes Inuvik too, so maybe she will come back.

S: And then she goes on and says 'Maybe she'll come back'.

[..]

J: Utiqhifurluuniin. Maybe she'll come back.

⁸⁶ The sentences and translations are from Lowe (1984). The segmentation and glossing are done by me based on Lowe (1984, 1985a) and MacLean (2014).

⁸⁷ Recall from the previous chapter that J, N and L refer to the consultants, and S refers to the interviewer.

Sentence under discussion:

Utiqhi**furluuniin**.
utiq - tuq - luuniin
return - IND.3.SG - *luuniin*
'Maybe she'll come back.'

(5.3)

Scenario: The speaker's husband has gone off with all his hunting gear. Someone calls the speaker and asks where her husband is. Anguniarungnaqtuq 'he went hunting-*hungnaq*' is judged as too weak a statement in that context, because the speaker has observed the husband leave with his hunting gear. The interviewer then asks if *anguniaqturluuniin* would work in the scenario described:

- S: What about if I said ... *anguniaqturluuniin*, maybe...?
N: ... **Luuniin** is another maybe there.
S: Yeah? Is it like the *anguniaqtukkiq*? ... Or more like the *anguniarungnaqtuq*
N: ... uhhh it's a maybe, but **luuniin** is uh ... *anguniarungnaqturluuniin* ...
Anguniarungnaqturluuniin is uh .. you're not sure. It's a maybe, but you're not sure if he is gone hunting.

Sentences under discussion:

Anguniarungnaqtuq	Anguniaqturluuniin
anguniaq - hungnaq - fuq	anguniaq - tuq - luuniin
hunting - <i>hungnaq</i> - IND.3.SG	hunting - IND.3.SG. - <i>luuniin</i>
'I think he went hunting.'	'He went hunting- <i>luuniin</i> .' ⁸⁸

Anguniaqtukkiq	Anguniarungnaqturluuniin
anguniaq - tuq - kiaz	anguniaq - hungnaq - tuq - luuniin
hunting - IND.3.SG - I.think	hunting - maybe - IND.3.SG - <i>luuniin</i>
'I think he went hunting.'	'Not sure if he's gone hunting.'

Given data (5.2) and (5.3), *luuniin* seems to be appropriate for expressing meanings equivalent to the meanings that may be expressed in English via *maybe*. The data does not, however, rule out that *luuniin* could also be a disjunctive connective as Lowe's (1984) description seems to suggest, in addition to being an expression of neutral epistemic force. The packaging of these two meanings in the same lexical entry is not unique to Uummarmiutun; in the Nilo-Saharan language Lango, for instance, the adverb *ónó* covers the meanings expressed in English by *or* and *maybe* respectively (Noonan in Boye, 2012a: 100). In the remainder of this section, I shall suggest how this packaging

⁸⁸ Recall from §4.3.2 that only the predicational content is provided in the translation tier when no specific English translation is mentioned by the consultant or the interviewer.

of meanings may distinguish expressions like *luuniin* from expressions such as English epistemic *might* and *may*, which express neutral epistemic force without overt disjunctive functions.

In the scenario in (5.2), *luuniin* modifies a clause that represents the state of affairs ‘she come back’ which is presented as a proposition which is equally plausible as another proposition evoked in the scenario, namely ‘she will stay’. That is, the function of *luuniin* in the sentence *utiqhiŕurluuniin* ‘she come back-*luuniin*’ seems to indicate that ‘she will come back’ is viewed as an equally plausible alternative to ‘she will stay’. This confirms Lowe’s (1984) description of *luuniin* as ‘either ... or’. Datum (5.3) may also be compatible with Lowe’s (ibid.) description, because it could be that *Anguniarungnaqturluuniin* ‘Maybe he went hunting-*luuniin*’ evokes the idea of an equally plausible alternative state of affairs. *Luuniin* is thus associated with disjunctive meaning in addition to neutral epistemic force. That is, *luuniin* seems to encode an instruction to entertain an alternative possible state of affairs, whereas the interpretations of other neutral epistemic force modals (such as *might* and *maybe*) are merely *compatible* with the entertainment of alternative states of affairs. On this analysis, the equation of the two states of affairs as equally possible and mutually exclusive is part of the interpretation in addition to the epistemic status of the state of affairs in the scope of *luuniin*.

Another reason to hypothesize that the disjunctive sense is part of *luuniin*’s encoded meaning in addition to the epistemic modal meaning, is that *luuniin* can combine with the epistemic modal *hungnaq* ‘probably’ (analyzed in §5.3.2). If *luuniin* contributes with epistemic modal meaning only, it is not clear what *luuniin* adds to the interpretation of a word like *Anguniarungnaqturluuniin* ‘Maybe he went hunting-*luuniin*’ in (5.3) above, where *hungnaq* is also present. If we hypothesize that *luuniin* packs the disjunctive connective sense in addition to its neutral epistemic force sense, the interaction between *luuniin* and *hungnaq* is easy to explain: *hungnaq* expresses that there is epistemic force towards verification of the predicational content, and *luuniin* contributes to the interpretation by evoking the idea of an alternative state of affairs, which is equally possible as the state of affairs expressed by the linguistic material in the scope of *luuniin* and *hungnaq*.

I conclude that the enclitic *luuniin* is indeed a modal expression, at least when the host word is a verb, and that *luuniin* additionally encodes a disjunctive connective sense. I hypothesize that in some contexts, the disjunctive connective sense is more predominant – this is probably the case when the host is nominal as in (5.1) – and in other contexts the neutral epistemic force sense will

be predominant. In the latter case, the disjunctive sense adds to the interpretation by evoking the idea of an alternative state of affairs which is equally plausible. The hypothesis regarding *luuniin* and the evoking of alternative states of affairs on mainly epistemic uses of the clitic awaits future confirmation. Also the interpretation of *luuniin* on nominal hosts awaits further research. It is however reasonable to expect on the basis of cross-linguistic observations (see Boye, 2012a: 253-5, and the data therein) that *luuniin* will coerce the interpretation of the nominal host and yield a propositional representation. The interpretation of (5.1a), for instance, would then be ‘it is this one’.

5.2.2 *kiaq*

The meaning of the enclitic *kiaq* is described as ‘*perhaps, maybe, I wonder ...*’ in the Uummarmiutun dictionary (Lowe, 1984: 115). The use of the English modal expressions *maybe* and *perhaps* in the entry suggests that *kiaq* encodes neutral epistemic force, which is a modal meaning on the present definition of modality. In the examples provided in Lowe (ibid.), *kiaq* is attached to nominals as exemplified in (5.4):

(5.4)

- | | | | |
|----|---|----|--|
| a. | <p>Iñuuvingmikiaq
 Iñuuvik - mi - kiaq
 Inuvik - LOC - perhaps
 ‘Perhaps in Inuvik’</p> | b. | <p>Unakiaq
 un - na - kiaq
 DEM.EXT.VIS - PRON.DEM.SG.ABS - perhaps
 ‘Perhaps this one’</p> |
| c. | <p>Hunakiaq
 hu - na - kiaq
 INT.DEM - PRON.DEM.SG.ABS - I.wonder
 ‘I wonder what?’
 (Lowe, 1984)⁸⁹</p> | | |

It appears from some of the data collected for the present study that *kiaq* may not only attach to nominals, but also to verbal hosts, where it takes scope over the proposition expressed, as in (5.5):

- (5.5) **Hanngifukkiaq**
 hanngi - fuq - kiaq
 strong - IND.3.SG - I.wonder
 ‘I wonder if he’s strong’ (Field notes)

⁸⁹ The sentences and translations are from Lowe (1984). The segmentation and glossing are done by me based on Lowe (1984, 1985a) and MacLean (2014).

Some consultants were though reluctant to accept *kiaq* on verbal hosts in the declarative mood and especially in the interrogative mood. In Utkuhikšalingmiutut, the enclitic *kiaq* does attach to verbs as well as to nouns, and the same is the case for *kiaq* in Siglitun and North Slope Iñupiaq:

(5.6) Utkuhikšalingmiutut:

Qanurittungakiaq

qanuq - it - tunga - kiaq

how - be.a.certain.way - PART.1SG - indefinite

‘I don’t know how I felt (when my sister was born).’ (Briggs et al. 2015: 196)

(5.7) Siglitun:

Aullarniaqtuamikiaq

aullaq - niaq - tuami - kiaq

leave - FUT - IND.3.SG - might/maybe

‘I might leave’ / ‘maybe I will leave!’ (Lowe, 2001: 219)⁹⁰

(5.8) Uummarmiutun:

Aniyuakiaq

ani - yuaq - kiaq

go.out - IND.PAST.3.SG - I.think/possibly

Consultant’s explanation:

‘I think she went out / possibly she went out’ (Field notes)

(5.9) North Slope Iñupiaq:

Akimaruakkiaq Aaᅇa

akima - ruq - kiaq Aaᅇa

win - IND.3.SG - *kiaq* Aaᅇa

‘I think Aaᅇa won.’ (MacLean, 2014: 1151)⁹¹

Given that *kiaq* may attach to verbs in Utkuhikšalingmiutut, Siglitun and North Slope Iñupiaq, I hypothesize that the occasional rejections of verbs with *kiaq* during the interviews concerning Uummarmiutun were due to other factors, e.g. semantic oddness caused by the combination of *kiaq*

⁹⁰ The sentences and translations are from Lowe (2001). The segmentation and glossing are done by me based on Lowe (1985b, 2001) and MacLean (2014).

⁹¹ The sentence and the translation are from MacLean (2014). The segmentation and glossing are my own responsibility. They are based on MacLean (2014).

with the semantic properties of the given verb. It is interesting to note that *kiaq* may also attach to the word *ahulu* described as ‘probably’ in Lowe (1984) (see §5.2.4 below). The same is true for the Siglitun cognates *kiaq* and *ashulu* (field notes), and the combination is also found in North Slope Iñupiaq where *asulukiaq* is described as ‘that’s right!’ (MacLean, 2014: 84). Future research may appropriately address the use of *kiaq* in combination with *ahulu* ‘probably, that’s right’ in conversation. The present study does not explore the combinatorial restrictions on *kiaq* further, and restricts itself to what can be concluded about the meaning contributed by *kiaq* when attached to simple verbal hosts.⁹²

The data collected for the present study on Uummarmiutun indicate that *kiaq* expresses modal meaning, at least when the host word is verbal. Throughout the interviews, verbs with *kiaq* (when accepted) are associated with less than full certainty about the epistemic status of the predicational content in its scope. Consider e.g. (5.10), where the consultant associates *Hanngiřukkiaq* ‘he is strong-*kiaq*’ with decreased certainty and the English neutral epistemic force modal *maybe*:

(5.10)

L is elaborating on the meaning of *Hanngiřukkiaq* ‘he is strong-*kiaq*’:

L: Hanngiřukkiaq.. its almost there is a little uncertainty. You know – like .. I’m not too sure, but maybe that’s, maybe he IS strong.

Sentence under discussion:

Hanngiřukkiaq
 haangi - řuq - kiaq
 strong - IND.3.SG - *kiaq*
 ‘Maybe he IS strong.’

There are some indications in the data set that *kiaq* may also be used to express *partial* epistemic force: in (5.11) below, the consultant accepts *nirigaakiaq* ‘he eat it-*kiaq*’ in the following scenario where the speaker is arguably biased towards the belief that the proposition is true:

⁹² As was hypothesized for *luuniin* in §5.2.1, the use of *kiaq* on nominal hosts presumably coerces the interpretation of the nominal into a propositional representation (see Boye, 2012a: 253-5).

(5.11)

L is elaborating on *nirigaakiaq* ‘he ate it-*kiaq*’ in relation to the following scenario: The speaker left a piece of maktak on the table, turns around and stirs in the stew. When she turns around again, the maktak is gone. The dog is sitting next to the table and looks really happy.

L: He must have ate it, who else is in the room? You know – what other .. that .. -*gaakiaq* is that .. because there is nobody else around here. Who else could have .. and he looks happy, yeah.

Sentence under discussion:

Nirigaakiaq
niri - gaa - *kiaq*
eat - IND.3.SG.SUBJ.3.SG.OBJ - *kiaq*
‘He must have ate it.’

The consultant’s elaboration suggests that she understands the scenario such that the speaker would have fairly strong support for the truth of the proposition. Also (5.12) below indicates that *kiaq* may be used to express partial epistemic force, as the consultant uses *probably* and *must* in her translations of the sentence with *kiaq*:

(5.12)

L: And then that atniaq.. atniaqtuk*kiaq*? That’s uhm .. she’s probably, she must be sick.

Sentence under discussion:

Atniaqtukiaq
atniaq - tuq - *kiaq*
sick - IND.3.SG - *kiaq*
‘She’s probably sick / She must be sick’

Judging from data like (5.11) and (5.12), it thus appears that *kiaq* may cover partial epistemic force in addition to neutral epistemic force as indicated in (5.10).

Given that *kiaq* may be used to convey neutral as well as partial epistemic meaning, it could be that *kiaq* restricts ‘less than full epistemic force’. This would make *kiaq* similar to the postbase *hungnaq* ‘probably’ (see §5.3.2). There does though appear to be one aspect that distinguishes *hungnaq* and *kiaq*, in that the latter appears to be more closely associated with the idea of the speaker’s attitude or thought-process. First of all, recall that Lowe (1984) includes the phrase ‘I wonder’ in the entry for *kiaq*. That this meaning aspect is associated with *kiaq* is confirmed by data like (5.13) and (5.14) below:

(5.13)

The consultant is elaborating on the difference between *hanngihungnaqtuq* ‘he must be strong’ and *hanngifukkiaq* ‘he is strong-kiaq’:

L: Yes. And then you say Aqaalli hanngihungnaqtuq, he must be very strong – you know. But this one, hanngifuk**kiaq**, cause when I hear that **kiaq**, it’s almost like I’m asking a question or something. Hanngifuk**kiaq**.. like I’m .. not too certain.

Sentences under discussion:

Aqaalli hanngihungnaqtuq	Hanngifuk kiaq
Aqaalli hanngi - hungnaq - fuq	hanngi - fuq - kiaq
oh.my.gosh.EXCL strong - must.be - IND.3.SG	strong - IND.3.SG - <i>kiaq</i>
‘He must be strong.’	Questioning whether he is strong

(5.14)

L: To me it’s just like I’m questioning what somebody said. I’m not really believing that he’s strong. It’s almost like you’re wondering if it’s true or not. Hanngifuk**kiaq**, you’re questioning if it’s true or not. I wonder if he’s strong.

[..]

L: Uvluriaq hanngifuk**kiaq**. I wonder. I heard somebody say this, but I wonder if she’s really that strong. You’re just kind of guessing.. Somebody said she picked up that big log, but I don’t know, Uvluriaq hanngifuk**kiaq**. I don’t know if she’s THAT strong. It’s hard for me to believe cause she’s so tiny. You know – like I’m questioning that statement that somebody made.

Sentences under discussion:

Uvluriaq hanngifuk kiaq
U. hanngi - fuq - kiaq
[NAME] strong - IND.3.SG - <i>kiaq</i>
‘Wondering/questioning whether Uvluriaq is (that) strong’

Also L’s elaboration in (5.15) below suggests that *kiaq* is used to refer to the speaker’s own experience of the verificational status of the proposition as unsettled:

(5.15)

L and S are talking about the meaning and use of *hanngifukkiaq* ‘he is strong-kiaq’:

S: Can we, is there some kind of evidence that could be behind this one too, maybe weaker evidence, or..

L: Yeah. You know – not so visible or not so.. – you know – like, we didn’t know if he carried the whole bull, or whole something. There weren’t many stories or something about that person. But you know he was strong. But .. Hanngifuk**kiaq**, he must have been strong, he might have been strong. But me I’m not too certain, cause I never heard many stories about him.

Sentence under discussion:

Hanngifukkiq

hanngi - fuq - kiaz

strong - IND.3.SG - *kiaz*

Questioning whether he is strong

These explanations of *kiaz* do not at a first glance distinguish *kiaz* from epistemic expressions in general; after all, interpretations of utterances with epistemic modals are arguably compatible with the assumption that the speaker has connected some knowledge or experience to the likelihood of the truth of the proposition which was not enough to settle its verificational status completely.⁹³ Nevertheless, *kiaz* seems to make an explicit reference to the speaker's attitude towards the epistemic status of the proposition as unsettled; given (5.13), (5.14) and (5.15), it appears that *kiaz* not only a) presents the predicational content as less than fully verified, but also b) conveys that the speaker *herself* is actively wondering about the epistemic status of the proposition.

The question is now whether *kiaz* is appropriately categorized as a modal expression. The data show that the predicational content in the scope of *kiaz* is clearly not presented as epistemically verified, and the meaning of *kiaz* may be translated by means of English modal expressions (see (5.10), (5.11), (5.12), (5.15)) and Lowe, 1984). Moreover, the scenarios matched with sentences with *kiaz* in (5.11), (5.13), (5.14) and (5.15) include reference to knowledge; in (5.14), for instance, the speaker knows that somebody has said that the subject referent picked up the log. *Kiaz* will therefore be categorized as an expression suitable for conveying epistemic modal meaning. Given data like (5.11) and (5.12) where *kiaz* is associated with partial force plus the several data where *kiaz* is associated with neutral force, the tentative conclusion is that *kiaz* is restricted to 'less than full' force. The status of p as unsettled appears to be a salient property of *kiaz*. This is especially evident in (5.14) when the consultant says: "*Somebody said she picked up that big log, but I don't know. [...] I don't know if she's THAT strong. It's hard for me to believe cause she's so tiny.*" It thus appears that the use of *kiaz* is concerned with conveying the speaker's experience of the predicational content as unsettled with respect to epistemic status (see also (5.13) and (5.14)). It appears to me that a semantic proposal for *kiaz* therefore should include some sort of restriction on

⁹³ If a speaker for instance utters *He may be there* or *He must be there*, she – unless she indicates otherwise – arguably gives the impression that *she* has made the assessment of the given knowledge or experience in relation to the truth of the predicational content, and that she found that it yields neutral or partial force towards the verification of p.

speaker involvement in the epistemic process. Future research on *kiaq* should explore whether *kiaq* also restricts evidentiality, and check whether *kiaq* has root modal meanings in addition to epistemic modal meaning.

5.2.3 *guuq*

The Uummarmiutun dictionary (Lowe, 1984) dictionary provides the following description of the meaning of *guuq*:

Reported or repeated information; this suffix is used when the speaker is reporting something he has heard has happened or thinks has happened, or is repeating something he himself has heard someone else say. Various English translations in English are possible, such as: they say that ..., I heard that ..., he said that ... (Lowe, 1984: 95)

Guuq is an enclitic and it attaches to nominal as well as verbal hosts. As can be seen in the examples from Lowe (ibid.) below, *guuq* may be used to pass on what other individuals have reported. The initial consonant assimilates in accordance with the final consonant of the host word or causes gemination, depending on the properties of the final consonant (see Lowe, ibid., for details):

(5.16)

- | | |
|---|---|
| a. Tikitchuruuq
tikit - tuq - guuq
arrive - IND.3.SG - <i>guuq</i>
‘They say he has arrived’ | b. Tikitchugguuq
tikit - tuk - guuq
arrive - IND.3.DU - <i>guuq</i>
‘They say they two have arrived’ |
| c. Tikitchutguuq
tikit - tut - guuq
arrive - IND.3.PL - <i>guuq</i>
‘They say they have arrived’ (Lowe, 1984: 95) ⁹⁴ | |

When *guuq* is used in a sentence consisting of a verb plus nominal arguments, the meaning appears to be the same regardless of whether *guuq* figures on the verbal or the nominal constituent – the meaning of *guuq* appears to scope over the clause in either case (field notes, 2015). I shall leave the study of *guuq* in utterances consisting solely of a nominal constituent to future research and

⁹⁴ The sentences and translations are from Lowe (1984). The segmentation and glossing are done by me based on Lowe (1984, 1985a) and MacLean (2014).

merely focus on how *guuq* contributes meaning to verbal words and the sentences in which they occur.⁹⁵

There are at least two reasons for checking whether *guuq* is a modal expression. The first reason is that one of the uses of *guuq* listed in Lowe (1984) is “[...] *the speaker is reporting something he has heard has happened or thinks has happened* [...] (ibid.: 95, my emphasis). If *guuq* is used to indicate that the speaker thinks (as opposed to ‘knows’) that the state of affairs has happened, it could be that *guuq* is an expression of slightly decreased certainty, e.g. ‘partial epistemic force’, which is a modal meaning according to the present definition. Moreover, given that *guuq* is associated with the rendering of other people’s utterances, *guuq* is probably a reportative evidential expression. Some – but not all – evidential expressions encode modal restrictions in addition to their evidential restrictions (recall Chapter 3, §3.4.2; Boye, 2012a). The present section therefore checks if *guuq* restricts epistemic force in addition to its evidential meaning.

Data (5.17) and (5.18) indicate that *guuq* can be used to express less than full epistemic force. In (5.17), L associates a sentence with *guuq* – *utiqtuguuq* ‘she has come back-*guuq*’ – and the corresponding sentence with the epistemic modal *hungnaq* ‘probably’ – *utirungnaqtuq* ‘maybe she has come back’ – with decreased certainty:

(5.17)

L is elaborating on the difference between the meaning of *utiqturuuq* ‘she has come back-*guuq*’ and *utirungnaqtuq* ‘maybe she has come back’:

- L: Utirungnaqtuq is ‘Maybe they’re back’. That -naqtuq is uhh little thing again where you’re not too certain.
- S: But would you say that if we say that you heard the rumor ..
- L: The rumor? Utirungnaqtuq? You could say that too, yeah. I could say that, but.. That -**turuuq**, it’s just like -naqtuq, like, it’s that same questioning-like thing, to me that’s the way I see it. **Utiqturuuq**.⁹⁶

⁹⁵ A reasonable hypothesis is, however, that when *guuq* is used in utterances consisting of a nominal constituent only, *guuq* coerces the interpretation of the nominal into a propositional representation (see Boye, 2012a: 253-5).

⁹⁶ The sentence carries indicative – not interrogative – mood inflection and hence the ‘question’ aspect of the interpretation is arguably due to the presence of *guuq*.

Sentences under discussion:

Utirungnaqtuq

utiq - hungnaq - tuq

return - *maybe* - IND.3.SG

'Maybe she's back'

Utiqturuuq

utiq - tuq - guuq

return - IND.3.SG - *guuq*

'She has come back-*guuq*' (questioning)

In (5.18), the use of *guuq* is accepted in a context where the speaker is not completely certain that the predicational content is true:

(5.18)

N and S have been talking about the sentence *Billym uqallautigaangani Sue umiaqpaqaaniktuaguuuq* 'Billy has told me that Sue already has a boat-*guuq*':

S: Can you say that too if you .. let's say that Billy told you this, but you think he's kind of, he says so many things.. can you still say Billym uqa ..

N: .. uqallautigaangani. Billym uqallautigaangani Sue umiaqpaqaaniktuaguuuq

S: Can you say that even if you, though you think that Billy, arh, he's just running around with rumors?

N: Yeah. Yeah you could also say that too because, you don't know, Billy just told you. Cause you don't know if she's got a boat or not. But Billy told you this, so you assume. You assume, assume along with Billy hahahah! Uqaqtulluřaaq Billy. Gossiper hahah!⁹⁷

Sentences under discussion:

Billym uqallautigaangani Sue umiaqpaqaaniktuaguuuq

B. - m uqallak - uti - gaangani

[NAME] - MOD speak - benefit - 3.SG.SUBJ.1.SG.OBJ.PAST

S. umiaq - paqaa - nik - tuq

[NAME] boat - have - already - IND.3.SG

'Billy has told me that Sue already has a boat.'

Uqaqtulluřaaq Billy

uqaq - qtu - lla - řaaq

speak - a.lot - can - one.associated.with.the.action

'Billy is a gossiper.'

B.

[NAME]

⁹⁷ As discussed in Chapter 4, native speakers are sometimes less strict with the non-speaker interviewer when it comes to which words she can and cannot use. When N states "*Yeah, you could also say that*", it therefore does not follow that she herself or other speakers of Uummarmiutun would use the sentence under discussion in this context. On the other hand, N generally does not hesitate to let me know when a sentence is wrong – even in cases where I ask if I could say the given sentence in a given situation. It is therefore reasonable to assume that she would have rejected *Billym uqallautigaangani Sue umiaqpaqaaniktuaguuuq* here, if she had found it infelicitous.

In (5.17) and (5.18), the reportative property of *guuq* seems to yield interpretations along the lines of reluctance to commit to the proposition. *Guuq* may thus be used to communicate decreased certainty, i.e. ‘less than full’ verificational force towards the proposition in its scope. However, data like (5.19) and (5.20) below show that *guuq* may also be used to imply that there is not only less than full force towards the verification of the proposition – there is in fact force towards the *falsification* of the proposition, i.e. force towards the belief that the proposition is *not* a true description of the world:

(5.19)

L: Igluliuqtuguuq. That means he says he’s building right now. But it’s not happening.

Sentence under discussion:

Igluliuqtuguuq
 iglu - liuq - tuq - guuq
 house - build - IND.3.SG - *guuq*
 ‘He says he’s building a house.’ (But it’s not happening.)

(5.20)

S: Uhm, so what about igluliuniaqtuguuq ?

L: Igluliurniaqtuguuq ? He says he’s gonna build a house. Probably that’s the closest to Joe, – you know – just talk.

S: Can you say it like that even though you don’t think it’s gonna happen?

L: Yeah! It’s just talk. Yeah, I could say that, igluliurniaqtuguuq.

Sentence under discussion:

Igluliurniaqtuguuq
 iglu - liuq - niaq - tuq - guuq
 house - build - FUT - IND.3.SG - *guuq*
 ‘He says he’s gonna build a house.’

If it were the case that *guuq* encoded a restriction on less than full epistemic force towards the truth of p, it would be highly unexpected that *guuq* can be used to imply what seems to be verificational force towards ~p. The finding that *guuq* varies with respect to the epistemic status of the proposition in its scope is rather compatible with an analysis of *guuq* as not being lexically restricted with respect to epistemic force. This is in line with Fortescue’s (2003) analysis of West Greenlandic *guuq* as a quotative which expresses neutrality with respect to the verification of the proposition:

[..] used for ‘mediated’ illocutions of all sorts: it moves the responsibility for the speech act away from the speaker. Reports with –*guuq* suggest displaced responsibility for veridity rather than unreliability [...] the source of information being unspecified. (Fortescue, 2003: 295)

Consider also (5.21) below. Here the presence of *guuq* seems to increase the degree of force towards the truth of the predicational content to such degree that the information conveyed by the sentence with *guuq* (*Tuttu nakuarigaaruq* ‘he likes caribou-*guuq*’) is chosen over the information expressed by a simple declarative (*Natchiq nakuarigaa* ‘he likes seal’) as a basis for action in the scenario under discussion:

(5.21)

Scenario: You want to cook for your colleague Peter, and you don’t know him that well. And then you’re wondering what you’re gonna cook for him. And the one person says *Tuttu nakuarigaaruq* and the other one says *Natchiq nakuarigaa*. Would you then choose to cook caribou or seal for him?

- L: He said he likes caribou. You know – cause you got that -*gaaruq*, that Peter, that, that person told this person ‘He likes that caribou’. But when you just say *Natchiq nakuarigaa*, it just.. he just said ‘He likes the seal’. But when you say *nakuarigaaruq*, like it’s another person [...] *Tuttu nakuarigaaruq*, -*gaaruq* means he knows, he was told, that that person ... [...] and then *Natchiq nakuarigaa*, it just says ‘He likes seal’. You know – he never, nobody told him that. It’s just ‘He likes seal’. But when you say *Nakuarigaaguq* [...] Peter told this person. And this one, he didn’t tell me he likes it, but I know he likes seal.
- S: Yeah.. What would you make for him then?
- L: I would make him this (L points at the sentence *Tuttu nakuarigaaruq* in the interview guide), because he said he liked it.

Sentences under discussion:

Tuttu nakuarigaaruq
 tuttu nakuari - gaa - guuq
 caribou like - IND.3.SG.SUBJ.3.SG.OBJ - *guuq*
 ‘He said he likes caribou.’

Natchiq nakuarigaa
 natchiq nakuari - gaa
 seal like - IND.3.SG.SUBJ.3.SG.OBJ
 ‘He likes seal.’

In (5.21) it appears that the fact that the speaker got the information from Peter himself makes it even more likely to be true.

The data set shows that *guuq* can be used to express less than full force towards the verification of the proposition as illustrated in (5.17) and (5.18), which is a modal meaning.

However, *guuq* can also be used to express full force towards the falsification of the proposition as in (5.19) and (5.20) as well as full force towards the verification of the proposition as in (5.21). It is therefore not the case that *guuq* is lexically restricted to a certain degree of epistemic force. *Guuq* is evidential only, and the meaning encoded by *guuq* falls outside the category of modality on the present definition.

Considering this conclusion, it is also interesting to note that *guuq* in West Greenlandic is not only not a modal expression, but on some accounts not even an evidential expression. Boye (2012a) writes that West Greenlandic *guuq* is a genuine quotative marker and argues that verbatim quotation is distinct from indication of epistemic justification (ibid.: 204-5), where the latter is his definition of evidentiality. Moreover, Boye (ibid.) – referring to Fortescue (2003) – argues that *guuq* is quotative rather than evidential because it follows and thereby scopes over illocutionary affixes like interrogative and optative, which leads to the conclusion that *guuq* is speech act oriented rather than proposition oriented. I shall not go deeper into the discussion on *guuq* and level of meaning.

Regardless of whether *guuq* is appropriately analyzed as an evidential or quotative, and regardless of whether *guuq* takes the proposition or the speech act in its scope, it is interesting to note how *guuq* can be used to yield various interpretations regarding the epistemic status of the predication in its scope, as illustrated in (5.17), (5.18), (5.19), (5.20) and (5.21). Since *guuq* is lexically neutral with respect to epistemic status of the proposition in its scope, these varying epistemic statuses must be results of pragmatic inferences. Consider also (5.22) below, which indicates that *guuq* can be used in utterances conveying that the propositional content is true. The presence of *Aaŕigaa!* ‘How nice!’ in *Aaŕigaa paniga igluliniaqtuguuq!* ‘How nice! My daughter says she’s gonna build her house’ entails the view that the propositional content is true in that the speaker in the scenario evaluates it as ‘nice’. When *guuq* is appropriate in this utterance, it shows that *guuq* may be used in utterances presenting the propositional content as true. (5.22) also shows that by changing the tone of voice (and obviously omitting *Aaŕigaa!* ‘How nice!’), the speaker may guide the hearer towards an interpretation of distance towards the truth of the proposition:

(5.22)

L and S are talking about the sentence *Igluliniaqtuguuq* ‘she is going to build a house-guuq’:

- S: Can you also say it if your daughter told you that she’s gonna build a house. And you know, because you know her, that she’s gonna get it done. Can you then also say *igluliurniaqtu.*
- L: *-tuguuq?* Yeah! With much with more confidence in my voice and my facial expression. I could say, Aafigaa, Paniga *igluliniaqtuguuq!* How nice, she says she’s gonna finally build her, or starting to build her house! .. Aglaan⁹⁸; Joe *igluliurniaqtuguuq* [L makes her voice sound sad] You know – you hear that Joe said he’s gonna build a house, but .. and then there’s this little ‘but’ – you know .. I’ll believe it when I see it. And it’s just the way the situation is right at the moment. She being the person she is, and Joe being the person he is – you know – and different people, different .. It really changes in the language, or even how you just say it.

Sentences under discussion:

Aafigaa paniga *igluliniaqtuguuq!*

aafi - gaa panik - ga iglu - liuq - niaq - tuq - guuq
 good - 3.SG.SUBJ.3.SG.OBJ daughter - 1.SG.POS.SG house - build - FUT - IND.3.SG - *guuq*
 ‘How nice! My daughter says she’s gonna build her house.’

Joe *igluliurniaqtuguuq*

J. iglu - liuq - niaq - tuq - guuq
 [NAME] house - build - FUT - IND.3.SG - *guuq*
 ‘He says he’s gonna build a house.’ (I’ll believe it when I see it.)

Data like (5.22) shows that *guuq* may interact with various contextual cues to convey various assumptions about the epistemic status of the predicational content. That *guuq* can be used in utterances conveying various epistemic statuses in addition to marking the utterance as attributed to somebody other than the speaker, is consistent with the finding that *guuq* is not grammatically obligatory when the predicational content was reported to the speaker by another individual. This is illustrated in (5.23) below:

(5.23)

J and S are talking about the sentence *Utiqtuguuq* ‘She has come back-guuq’:

- S: But if it’s an Elder who told you, would you also say *utiqtuguuq?*
- J: Because Elder said that person come back, I’m gonna say *utiqtuq.*
- S: *Utiqtuq.* So you don’t have to say *utiqtuguuq* ?

⁹⁸ L appears to use the word *aglaan* ‘but’ to distinguish between the two sentences under discussion, and *aglaan* is hence not part of the sentence she discusses. In the same fashion, consultants frequently use the Uummarmiutun word for ‘yes’, *ii*, as a positive response to questions concerning the acceptability of a sentence.

- J: (confirms with nod)
 S: You say utiqtuq?
 J: Well you could say both of them. You could both of them is uhm .. utiqtu**guuq**, you could uhm .. my grandfather my grandmother told me, and you could say utiqtu**guuq** – you know – ..You could tell somebody utiqtu**guuq**
 S: Because my grandfather told me?
 J: Yeah.
 S: But does it then sound I'm a bit doubting that it's true?
 J: Utiqtuq it's really really real word. Utiqtuq. He come back. But when you told somebody utiqtu**guuq** – you know – not, not kind of doubt, but you're telling somebody utiqtu**guuq**, is there come back.

Sentences under discussion:

Utiqtu guuq	Utiqtuq
utiq - tuq - guuq	utiq - tuq
return - IND.3.SG - <i>guuq</i>	return - IND.3.SG
'She has come back- <i>guuq</i> '	'She has come back.'

As indicated by J, the speaker can choose to use *guuq* or choose to utter a simple declarative in cases where the reporter is a trustworthy source.⁹⁹ Given that *guuq* is not obligatory when the predicational content was reported to the speaker, it is likely that the speaker's choice between using *guuq* or not may depend on her desire to convey implicatures derived from the instruction to entertain the propositional content as having been reported to the speaker. One type of such implicatures may concern the epistemic status of the proposition, given that utterances with *guuq* vary with respect to whether they are interpreted such that the predicational content has a high or a low epistemic status.

With respect to the status of *guuq* as a modal expression, I conclude that *guuq* is no modal, because it is not lexically restricted to a certain epistemic force. *Guuq* can be used to convey less than full force towards the verification of the proposition, but also full force for the verification of the proposition as well as full force for the falsification of the proposition. The varying epistemic statuses of propositions in the scope of *guuq* therefore seem to depend on contextual factors, which cannot be ascribed to a lexical restriction on a certain modal force. When the presence of *guuq* appears to affect the epistemic status of the proposition in either direction, this is probably better explained as implicatures derived on the basis of the proposition as being reported plus contextual

⁹⁹ J prefers a sentence with *hungnaq*, i.e. *utirungnaqtuq* 'she has returned-*hungnaq*', if the reporter is a less knowledgeable source, see datum (5.107) in §5.3.2.2.

assumptions about the (reliability of) the reporter in relation to the propositional content. This hypothesis is explored in greater detail for *guuq* and other similar evidentials in general in Chapter 8, where *guuq* will be used to increase the applicability of the proposed model to also capture evidential meanings.

5.2.4 ahulu

Lowe (1984: 10) renders the meaning of the independent form *ahulu* as “*maybe, probably*”. Given this entry, *ahulu* could well be an epistemic modal expression. No example sentences with *ahulu* are provided. The Siglitun cognate *asulu* receives a similar description in Lowe (2001), also without examples. Some of the collected data support Lowe’s (1984) description of *ahulu*:

(5.24)

- S: How about this one, just that sentence here, do you think it looks like ..
- L: (looks at the sentence in the interview guide) Tunigaa **ahulu** ? Tunigaa, he sold it. **Ahulu** is .. I guess he sold it! Hahah or something like that. Tunigaa **ahulu**. That **ahulu** is uhm .. It’s almost like a question.
[..]
- L: But I’m, I can’t just say tunigaa, cause then I’ll say, that will know that she sold it. But this one **ahulu** is uhm .. ‘I think she’, ‘I’m quite certain she sold it’. It’s almost like you’re questioning yourself when you’re saying that, or second guessing yourself. [...] Cause I don’t really know if she sold it. I’m just saying I think she sold it. I have no evidence that she really sold it, but there’s a possibility that she did sell it.

Sentence under discussion:

Tunigaa ahulu	
tuni - gaa	ahulu
sell - IND.3.SG.SUBJ.3.SG.OBJ	<i>ahulu</i>
‘I think she sold it. I don’t know.’	

Like Lowe’s (1984) entry, (5.24) indicates that *ahulu* may be used to express decreased certainty of the truth of the predicational content, i.e. less than full epistemic force, which is a modal meaning on the present definition. The hypothesis that *ahulu* may be used to express epistemic uncertainty is further supported by the consultant’s association of *ahulu* with a question in the light of the close affinity between epistemic uncertainty and polar questions (see Boye, 2012a). This is in line with

MacLean’s (2014: 51) analysis of the North Slope Iñupiaq cognate *asulu* as being composed by the root *asu* ‘wonderment’ and the enclitic *lu* ‘and, also’.

It appears from the collected data that the form *ahulu* may have another non-modal use, which seems in line with MacLean’s (2014) description of the meaning of North Slope Iñupiaq *asulu* as: “(excl.) *you’re so right; should have done so*” (ibid.: 1250). Similarly, in Eastern Inuktitut dialects, *asu* is used as a response during conversation with a meaning that may be paraphrased as *really*, in order to keep conversation going (Alana Johns p.c., December 2016). As for Uummarmiutun, one consultant stated that one cannot make a sentence with *ahulu*, and judging from (5.25) and (5.26), *ahulu* appears to have exclamative functions where the meaning conveyed could be something like ‘you’re so right’ or another type of confirmation of what the interlocutor has said:

(5.25)

J and S are talking about the difference between *aafigaa* ‘how nice’ and *ahulu* as a response to the utterance *Peter angufuq* ‘Peter got an animal’:

- J: What if the person had just said afigaa.
 J: Yeah, aafigaa
 S: Would that be the same or is it different?
 J: No, uhh .. Aafigaa, Peter angufuq. But **ahulu** means the whole thing. The whole answer.

Sentence under discussion:

Aafigaa, Peter angufuq
 aarfɣaa P. angu - fuq
 how.nice [NAME] catch.an.animal - IND.3.SG
 ‘How nice, Peter got an animal!’

In the elaboration following (5.25), the consultant indicates that a speaker could respond to *Peter angufuq* ‘Peter got an animal’ with *ahulu* if she already knows that Peter is a good hunter:

(5.26)

- J: Peter angufuq. **Ahulu.** .. Because I know Peter. That he could hunt and ... good hunter. **Ahulu** I could say **Ahulu.**
 S: So like uhh, ‘I see’, or ‘I know’, or, ‘I’m not surprised’?
 J: Yeah, yeah that’s everything. That answer is everything. I’m not surprised .. Peter has catch something .. Because I know Peter could hunt everything.
 [..]

- S: So that was Peter angufuq.
 J: **Ahulu**, I could say **ahulu**. [...] Because I know Peter. If I didn't know Peter, I would say luuniin, hahahahaha!
 S: What does that mean?
 J: uhm .. Maybe. Because uhm I don't know Peter. I just say luuniin. Hahahhah Luuniin.¹⁰⁰

It thus appears that the speaker who uses *ahulu* as a response to another person's utterance indicates that she finds the content of that utterance plausible. Also (5.27) below suggests that *ahulu* expresses some type of endorsement of the epistemic status of the previous utterance:

(5.27)

- S: So if I meet somebody and I say Atira Signe. And then the other person says **Ahulu**.
 J: No. No no. That's not the answer.

Sentence under discussion:

Atira Signe
 atiq - ra S.
 name - 1.SG.POS.SG [NAME]
 'My name is Signe.'

In (5.27), *ahulu* is rejected as a response to *Atira Signe* 'my name is Signe'. The hypothesis that *ahulu* indicates epistemic endorsement – or epistemic assessment in general – predicts the inappropriateness of *ahulu* in (5.27) due to the oddness of expressing epistemic confirmation as a response to someone who introduces herself.

The use of *ahulu* to indicate that the speaker finds the interlocutor's prior statement plausible is similar to at least one of the uses of the North Slope Iñupiaq cognate *asulu* which, as noted above, among other things may be used to express 'you're so right' (MacLean, 2014: 1250). Also the Siglitun cognate *asulu* appears to have a similar function, however with a slightly weaker epistemic meaning. A Siglitun speaker consulted in connection with the present study would sometimes explain the meaning of *asulu* as 'I just sort of halfway agree, maybe so'. Consider also (5.28):

(5.28) Siglitun

H is elaborating on the use of *asulu*:

¹⁰⁰ See §5.2.1 for analyses of data on *luuniin*.

H: I would use it uhm .. when someone ask me a question.. Like uhm .. if my husband came back in, and we were sitting here ... he would ask me ‘Did Signe give you some cookies?’¹⁰¹ And I would say li (‘yes’). And then he would say Usiuma qaichianiaraanga.. [...] ‘Maybe she was gonna give me some’. And, if I was not too sure, I would say **Asulu**.

Sentence under discussion:

Usiuma qaichianiaraanga

Usiuma qai - chiaq - niaq - raanga

I.think.so come - one - FUT - IND.3.SG.SUBJ.1.SG.OBJ .POS.SG

‘I think she will give me some.’

(5.25) and (5.26) indicate that Uummarmiutun *ahulu* – like North Slope Iñupiaq *asulu* – expresses full endorsement of the truth of the content of the hearer’s previous utterance when used as a response or exclamation. (5.24) on the other hand aligns with Lowe’s (1984) description in that it indicates that *ahulu* may be used to express that the proposition in its scope is less than fully supported. Further research on Uummarmiutun *ahulu* should address whether the speaker assigns a high or a low epistemic status to the proposition in the scope of *ahulu* – be it an antecedent from the interlocutor’s utterance (see (5.25) and (5.26)) or articulated within the utterance with *ahulu* (see (5.24)). A tentative hypothesis based on the presently available data is that *ahulu* expresses uncertainty when modifying the speaker’s own utterance, and certainty or epistemic endorsement when used as an exclamation or a response to somebody else’s utterance. It is therefore not possible at the present stage to determine whether *ahulu* is restricted to modal meaning, or whether *ahulu* covers full as well as partial epistemic force.

Another interesting topic for future research on *ahulu* is its combination with *kiaq*. Consider (5.29):

(5.29)

S has asked L about *ahulu*:

L: **Ahulu?** It’s like uhmmm .. **ahulu** .. sometimes I hear it in the end when some people say something. [...] It’s like some sort of, it’s an answer to a questions. .. Shiela qaiva? or Shiela utiqpa Edmonton-min? **Ahulu**, nalugiga, **ahulukiaq**..

¹⁰¹ The consultant and the interviewer are sitting in the consultant’s kitchen. The interviewer has brought cookies to the meeting.

Sentences under discussion:

Shiela qai va?	Shiela utiqpa Edmonton-min?
S. qai - va	S. utiq - pa Edmonton - min
[NAME] come - INT.3.SG	[NAME] return - INT.3.SG. Edmonton - TERM
‘Has Shiela come?’	‘Has Shiela returned from Edmonton?’

Ahulu, nalugiga, **ahulukiaq**..

ahuli nalu	- giga	ahulu - kiaq
<i>ahulu</i>	do.not.know - IND.1.SG.SUBJ.3.SG.OBJ	<i>ahulu</i> - I.wonder
‘ <i>Ahulu</i> , I don’t know, <i>ahulukiaq</i> ’		

Given (5.29) it appears that *ahulukiaq* as well as *ahulu* can be used when the speaker is uncertain whether or not a proposition – here whether or not Shiela has returned – is verified. In North Slope Iñupiaq, however, it appears that *asulukiaq* expresses certainty given MacLean’s (2014: 51) description of *asulukiaq* as ‘It’s right’. More research is needed to determine whether the use of *ahulu* as a response or exclamation is restricted to epistemic endorsement of the antecedent (as in (5.25) and (5.26)) like the North Slope Iñupiaq cognate seems to be (see MacLean 2014: 51), or whether *ahulu* as a response or exclamation can also express decreased certainty (as in (5.29)). A reasonable tentative hypothesis is that *ahulu* does in fact express endorsement in (5.29), but since the antecedent is a question, *ahulu* endorses the speech act of questioning rather than the truth of a proposition. The combination of *kiaq* ‘I wonder’ with *ahulu* in (5.29) would then be interpreted along the lines of ‘Yes, I too wonder whether Shiela has returned’.

In conclusion, *ahulu* clearly has epistemic modal uses similar to ‘probably’ as described in Lowe (1984) (see (5.24)). The collected data adds to Lowe’s (1984) description by showing that *ahulu* can also be used as a response to a statement (see (5.25) and (5.26)) or a question (see (5.29)) like its cognates in North Slope Iñupiaq and the eastern Inuktut dialects. In spite of some indication that *ahulu* is an epistemic modal, the meaning and function of *ahulu* when used as a response to other people’s utterances await further research, preferably based on analyses of conversational data. The present data set is not sufficient to propose a semantics for the form *ahulu*.

5.2.5 niq

Lowe (1984: 148) writes the following about *niq* in the Uummarmiutun dictionary: “*Reported information; this suffix is used when the speaker is reporting something he has heard has happened*

or thinks has happened. It may have various translations in English, such as: *apparently, I heard that ...*”. Among the examples provided in Lowe (ibid.) are the sentences in (5.30) below. As can be seen from the examples, the form *niq* may affect the final consonant of consonant final stems as in (5.30a-b), and the initial consonant in *niq* palatalizes when the stem contains a strong *l*¹⁰² as in (5.30c). Note also that the vowel in *niq* is a strong *i* and thereby affects the initial consonant of the preceding material such that the intransitive indicative person ending begins with *h*.

(5.30)

- | | |
|--|---|
| <p>a. Aullarniqh^huaq
 aullaq - niq - huaq
 leave - <i>niq</i> - IND.PAST.3.SG
 ‘I heard he left’</p> | <p>b. Katangniqh^huaq
 katak - niq - huaq
 fall.off - <i>niq</i> - IND.3.SG.SUBJ.3.SG.OBJ
 ‘He apparently fell off’</p> |
| <p>c. Aqiñira^ha
 aqi - niq - gaa
 kick - <i>niq</i> - IND.3.SG.SUBJ.3.SG.OBJ
 ‘He apparently kicked him’ (Lowe, 1984: 95)¹⁰³</p> | |

According to Lowe (1984: 148), one of the uses of *niq* is to report something the speaker thinks has happened. It may therefore be the case that *niq* is a modal expression. If *niq* can be used to indicate that the speaker merely *thinks* but does not know for sure that the state of affairs has taken place, then *niq* may be an expression of partial epistemic force, which is a modal meaning on the present definition of modality. Another reason to check *niq* for modal meaning properties is that Nagai (2006) and Lanz (2010) use the label ‘evidential modal’ for its cognates in Upper Kobuk Iñupiaq and Malimiut Coastal Iñupiaq respectively.¹⁰⁴

The data collected for the present study show that sentences with *niq* can convey full speaker certainty, i.e. full epistemic force, which is not a modal meaning on the present definition. In (5.31), the consultant first associates the sentence with *niq* with an English sentence containing the epistemic modal *must*. However, note in (5.32) – which is a continuation of (5.31) – that the

¹⁰² See Chapter 2, §2.3.2 and §2.4.2, and MacLean (1986a: 19-23) for details on ‘strong *l*’.

¹⁰³ The sentences and translations are from Lowe (1984). The segmentation and glossing are done by me based on Lowe (1984, 1985a) and MacLean (2014).

¹⁰⁴ Upper Kobuk Iñupiaq and Malimiut Coastal Iñupiaq are both sub-dialects of Malimiut Iñupiaq, which together with North Slope Iñupiaq constitutes the North Alaskan Iñupiaq dialect (see Figure 1, Chapter 2).

consultant interprets the scenario such that the speaker is sure, and she expresses her preference for the sentence with *niq* for conveying certainty that the state of affairs has taken place:

(5.31)

- S: Let's imagine that you uhm .. you just put a plate with maktak on the kitchen table, and then you turn around and you stir in the pot, and you turn around again, and the maktak is gone. And then the only other .. thing .. present in the room is your dog, who's lying down in the corner. What can you say about what happened to ..
- N: .. to your maktak
- S: Yeah
- N: Qimmira maktautiga niritirniraa You know – .. my dog uhm .. how would you say it now? Oh! My dog must have eaten my maktak.
[..]
- S: How did you say that again?
- N: Qimmira nirilirniraa¹⁰⁵ maktautiga. I was surprised! I got surprised because I was stirring in the xx and I turn around and Taima ('then'¹⁰⁶), my maktak is gone.

Sentences under discussion:

Qimmira nirilirniraa maktautiga
qimmiq - ra niri - liq - niq - raa
dog - 1.SG.POS.SG eat - quickly - *niq* - IND.3.SG.SUBJ.3.SG.OBJ

maktak - uti - ga
whale.skin.with.blubber - supply.of - 1.SG.POS.SG
'Oh! My dog must have quickly eaten my maktak.'

(5.32)

- N: Nirilirniraa, you know it. You're so sure because just you and the dog right in there.

Sentence under discussion:

Nirilirniraa
niri - liq - niq - raa
eat - quickly - *niq* - IND.3.SG.SUBJ.3.SG.OBJ
'He quickly ate it-*niq*'

¹⁰⁵ Note that this word *nirilirniraa* contains *liq* whereas the previously mentioned word *niritirniraa* contains *tiq*. N appears to settle for *nirilirniraa* rather than *niritirniraa*. Nevertheless, in MacLean's (2014: 504, 691) dictionary, *liq* and *tiq* are both described as 'quickly'.

¹⁰⁶ Judging from the recording, it may be the case that N says *tainna* 'in that way', rather than *taima* 'then'. Whether she says *tainna* or *taima* does not affect the analysis of the datum.

Judging from (5.31) and (5.32), it appears that the sentence with *niq*, *Nirilliriniraa* ‘he eat it-*niq*’, is associated with certainty that the dog has eaten the maktak, in that the consultant explains the sentence as conveying surprise that this has happened rather than decreased certainty that it has happened. Judging from (5.33) below, it seems that *niq* is in fact *restricted* to full certainty. In (5.33) *anihungnaqtuq* ‘he left-*hungnaq*’ – which contains the epistemic modal *hungnaq* ‘probably’ – is preferred over *aniniqhuq* ‘he left-*niq*’ if there is a possibility that the predicational content is not the case:

(5.33)

- S: So if we say that we’re at this party, and somebody asks you ‘Has Peter left?’, and you look around and, well, you don’t see his shoes uhm .. and then you say ‘Peter *aniniqhuq*’. Is that okay to say?
 J: *Aniniqhuq*, yeah. But uhm ... If you don’t see him, but he might be in there, you could say *Anihungnaqtuq*. That’s question.

Sentences under discussion:

Aniniqhuq	Anihungnaqtuq
ani - niq - huq	ani - hungnaq - tuq
go.out - <i>niq</i> - IND.3.SG	go.out - hungnaq - IND.3.SG
‘He leave- <i>niq</i> ’	‘He leave- <i>hungnaq</i> ’

Judging from the collected data, *niq* does not seem to be a modal expression, as sentences with *niq* are associated with full certainty, i.e. full epistemic force, rather than less than full epistemic force.

It may be noted that some of Lowe’s (1984) examples with *niq* contain the past tense indicative ending *-huaq*, while the data collected on *niq* for the present study concern *niq* in combination with the present tense indicative ending *-huq* and its transitive counterpart *-raa*. It seems unlikely, however, that the variation between *-huaq* and *-huq* should change the meaning contributed by *niq*, e.g. such that the interpretation becomes ‘less than full certainty’ when *niq* combines with *-huaq*. This is so, because the ending *-huq* may also yield past tense or perfect interpretations just like *-huaq*. In (5.34) below, for instance, the English sentence *actually he went dancing* is reasonably interpreted as full certainty and the consultant translates it with a sentence with *niq* plus the “present” tense ending *-huq*, which receives past interpretation in (5.34). This shows that *niq* plus past interpretations do not – at least according to the collected data – yield interpretations of less than full certainty:

(5.34)

- S: How do you say I thought Peter was hunting yesterday. But actually, he went dancing.
 J: [...] Anguniariahigalukaraa aglaan mumiarniqhuq hahahah !!!

Sentences under discussion:

Anguniariahigalukaraa aglaan mumiarniqhuq
 angu - niaq - iaq - hi - galuka - raa aglaan
 catch.game.animal - try - go.and - DUR - galuka¹⁰⁷ - IND.3.SG.3.SG.OBJ but

 mumiq - iaq - niq - huq
 dance - go.and - niq - IND.3.SG.
 ‘I thought he was hunting, but in fact he went dancing.’

Further data indicating that *niq* is used for conveying full certainty is (5.35) where a sentence with *niq* is interpreted as conveying something “real”:

(5.35)

L elaborates on the sentence tiglingniraa ‘he stole it-*niq*’:

- L: [...] And when you say Tiglikkaa it’s like ‘he stole it’. Just something was stolen. Like .. but Tiglingniraa, almost like you have evidence for it, it’s more like real, the truth, really. No assumption.

Sentences under discussion:

Tiglikkaa	Tiglingniraa
tiglik - kaa	tiglik - niq - raa
steel - IND.3.SG.SUBJ.3.SG.OBJ	steel - niq - IND.3.SG.SUBJ.3.SG.OBJ
‘He stole it.’	‘He stole it.’ (I have evidence)

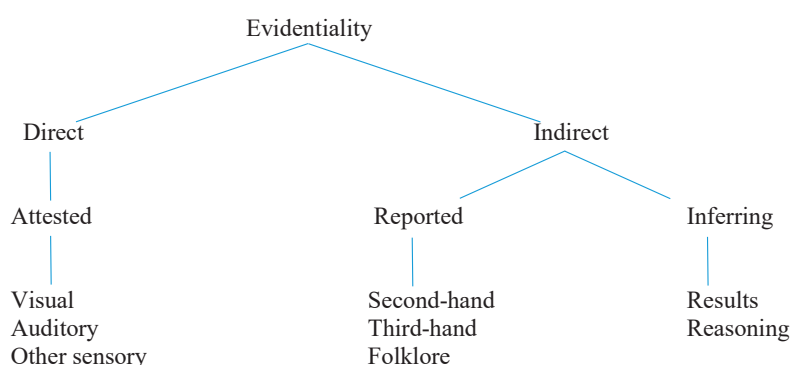
Judging from data like (5.31), (5.32), (5.33), (5.34) and (5.35) above, *niq* may be used to express a realized epistemic force-dynamic potential, and *niq*’s meaning thereby falls outside the definition of modality as unrealized force-dynamic potential.

While *niq* does not fall within the class of modal expressions, it is interesting to note that *niq* does indeed seem to encode meaning pertaining to the neighboring semantic category of evidentiality. Judging from Lowe’s (1984) description, *niq* may be used to pass on information obtained through reports from other individuals, and *niq*’s contribution to utterance interpretations

¹⁰⁷ I am not sure how is appropriately segmented and glossed. The datum is nevertheless concerned with the word i.e. mumiarniqhuq.

is sometimes reflected in English by means of the evidential expression *apparently*. Moreover, (5.31) and (5.32) show that *niq* is also appropriate in a scenario where the speaker draws a confident inference that the dog ate the maktak based on her observation of the absence of the maktak plus the dog's presence in the kitchen. Also in (5.35), there is a reference to a piece of evidence that fully supports the speaker's confident assumption that the subject referent stole the object in question. Considering these observations 'indirect evidentiality'¹⁰⁸ may capture the evidential properties of *niq*, as this category covers the information sources reports and inferences:

Figure 5.2: Willett's (1988: 57) taxonomy of evidential types



While some of the collected data support the hypothesis that *niq* expresses indirect evidentiality, it should be noted that sentences with *niq* are also associated with direct perception of the state of affairs itself. (5.33), for instance, seems to imply that *aniniqhuq* 'he leave-*niq*' is suitable when the speaker has seen the subject referent leave, since the consultant expresses preference for *anihungnaqtuq* 'he leave-*hungnaq*' over *aniniqhuq*, if the speaker does *not* see him. Also (5.36) below indicates that *niq* may be used when the speaker directly observes the state of affairs expressed by the material in the scope of *niq*. Prior to the segment in (5.36), N and S have

¹⁰⁸ Alternatively we could hypothesize that *niq* corresponds to 'inferred' evidentiality as in Aikhenvald's type B2 system or 'non-firsthand' as in Aikhenvald's type A1 system (Aikhenvald, 2004: 65). I shall nevertheless refrain from further attempts to fit *niq* into Aikhenvald's (2004) categories, as she approaches evidentiality as a grammatical paradigm rather than a semantic or notional category. Aikhenvald herself notes that the affixes with evidential meaning in West Greenlandic do not form a category of evidentiality (in her terms) as they are in opposition with other derivational affixes most of which have nothing to do with evidentiality (2004: 80). As in West Greenlandic, evidentials in Uummarmiutun do not form a grammatical paradigm contrary to the grammatical evidentiality paradigms on the basis of which Aikhenvald (ibid.) forms her typology of evidentiality systems.

discussed a couple of sentences in relation to a scenario where the speaker's dog comes home with biting marks in his fur and the speaker infers that the dog has been fighting. In (5.36), S is asking N about the sentences *ugiarungnaqtuq* 'he fight-hungnaq' and *ugiarniqhuq* 'he fight-niq' in relation to that scenario. Apparently, N prefers *ugiarungnaqtuq* if the speaker infers that the dog may be fighting, and *ugiarniqhuq* if she goes outside and sees it herself, i.e. when she observes the state of affairs represented by the proposition in the scope of *niq*:

(5.36)

- S: Ugiarungnaqtuq ?
 N: [...] You hear two dogs barking Araa! Ugiarungnaqtuq, qimmira ugiarungnaqtuq. You go out and check.
 S: uhhhh, and that was ugiarungnaqtuq
 N: Yeah, ugiarungnaqtuq, cause you could hear two dogs fighting outside and Araa qimmira ugiarungnaqtuq
 S: Ooooh! And what if you say uriarniqhuq¹⁰⁹
 N: Ugiarniqhuq, you see it already that he's fighting. He's already.. you go outside and you see it [...] Araa taikka qimmira ugiarniqhuq! My dog is .. Taikka .. he's over there fighting another dog. You see it. You see it. And when you say ugiarunganaq.. ugiarungnaqtuq is you hear it inside. And you don't even know if he's fighting or not.

Sentences under discussion:

Araa! Ugiarungnaqtuq, qimmira ugiarungnaqtuq
 araa ugiac - hungnaq - tuq qimmic - ra ugiac - hungnaq - tuq
 oh.my! fight - hungnaq - IND.3.SG dog - 1.SG.POS.SG fight - hungnaq - IND.3.SG
 'Oh my! He's fighting-hungnaq.' 'My dog is fighting-hungnaq'

Araa taikka qimmira ugiarniqhuq!
 Araa taikka qimmic - ra ugiac - niq - tuq!
 Oh my! over.there dog - 1.SG.POS fight - niq - IND.3.SG
 'My dog is over there fighting!'

It thus turns out that *niq* is appropriate when the predication represents a) a situation the speaker observes directly, as well as b) the result of an inference based on indirect evidence i.e. a report or an observation. At a first glance, this could favour an analysis where *niq* is not an evidential expression at all, because *niq* apparently restricts direct as well as indirect information sources. However, even though *niq* does not seem to restrict the *type* of information source, it is

¹⁰⁹ I mispronounce *ugiarniqhuq* as *uriarniqhuq*, and N corrects the word to *ugiarniqhuq*.

interesting to note that *niq* tends to evoke the idea of some piece of evidence upon which the speaker bases her firm belief that the predicational content is the case, i.e. the *existence* of evidence. This is especially apparent in L's elaboration in (5.35) above, where she says the following about the sentence with *niq*, *tiglingniraa* 'he stole it-*niq*': "*almost like you have evidence for it*". Also N's explanation in (5.36) above seems to point in the direction that utterances of sentences with *niq* evoke the notion of evidence, considering her choice of scenario for *ugiarniqhuq* 'he fight-*niq*' where the speaker goes outside and observes the dog fighting. Another interesting datum is (5.37) below. Here N compares *ugiarniqhuq* 'he fight-*niq*' with the corresponding unmarked sentence, and apparently the sentence with *niq* evokes the idea of the speaker's epistemic process, given N's choice to explain the meaning of *ugiarniqhuq* in terms of realization and surprise:

(5.37)

N: Ugiarniqhuq uhhh .. you realize that he, he is fighting. And this one is right now, ugiaqtuq, already you're, you see it fighting. [...] Ugiaqtuq, you already right there, seeing it. Ugiarniqhuq is uhhh .. you're telling them. You're telling, you gotta be telling these people. He IS, I mean your dog is fighting. Out there. Taikka qimmira ugiarniqhuq! You know – you're really .. how you say it, surprised or..

Sentences under discussion:

Ugiarniqhuq!	Ugiaqtuq
ugiaq - niq - tuq!	ugiaq - tuq
fight - <i>niq</i> - IND.3.SG	fight - IND.3.SG
'He's fighting' (I realize.)	'He's fighting'

Taikka qimmira ugiarniqhuq!
 taikka qimmiq - ra ugiaq - niq - tuq!
 over.there dog - 1.SG.POS.SG fight - *niq* - IND.3.SG
 'My dog is over there fighting! (surprise)'

Also (5.38), (5.39) and (5.40) below indicate that *niq* refers to the speaker's process of realizing or discovering that the predicational content is the case. In (5.38) the speaker explains the sentence with *niq* as conveying the speaker's surprise, and in (5.39) and (5.40) the sentences with *niq* are associated with the implication that the speaker thought that the opposite of the predicational content was the case:

(5.38)

L is elaborating on the difference between *Peter kamiliurniqhuq* ‘Peter made boots-*niq*’ and *Peter kamiliuqturuuq* ‘Peter made boots-*guuq*’:

L: But this one (points at the word *kamiliurniqhuq* in the interview guide) is Oh my God, Peter made a pair of shoes! Hahah, that **-niqhuq**, that **-niqhuq** makes it almost like OMG! Hahahaha!

Sentences under discussion:

Peter kamiliurniqhuq

P. kamik - liuq - niq - huq
[NAME] boots - make - *niq* - IND.3.SG
‘OMG Peter made a pair of boots!’

Peter kamiliuqturuuq

P. kamik - liuq - tuq - guuq
[NAME] boots - make - IND.3.SG - hearsay
‘Peter said he made a pair of boots.’

(5.39)

L: [...] Quviahung**niqhuq**, hahah!! Gonna say something like .. like – you know – sometimes you see these people who aren’t happy, they are just miserable people.. Ooooh Tom quviahung**niqhuq**, look Tom is actually happy..! [...] It’s a real like, He’s happy .. ! Unexpectedly happy! He’s happy! It’s almost like a spirit of the moment, it’s happening right now! [...] Look Tom is finally happy! Like something we never really expected. Just like when it was raining, we didn’t expect it, but it’s happening.

Sentence under discussion:

Tom quviahung**niqhuq**

T. quviahuk - niq - huq
[NAME] be.happy - *niq* - IND.3.SG
‘Tom is actually happy!’ (We did not expect this.)

(5.40)

N: It’s when you.. when everybody come in. They don’t know Polly is sleeping. So they all come in: “Oooh hiñing**niqhuq**.”

Sentence under discussion:

Hiñing**niqhuq**

hiñik - niq - huq
sleep - *niq* - IND.3.SG
‘She’s sleeping.’ (We did not know this.)

What the data show is that *niq* evokes the idea of a piece of evidence upon which the confident assumption p is based, and that *niq* may sometimes be used to indicate that the speaker has just realized that p. The latter property falls within the category of ‘mirativity’ which is “[...] *the linguistic marking of the utterance as conveying information which is new or unexpected to the*

speaker” (DeLancey, 2001: 369-370) as opposed to “[..] *knowledge which is already integrated into the speaker’s picture of the world*” (DeLancey, 2001: 379). Such mirative use is not incompatible with the finding that *niq* is appropriate with various information sources. As DeLancey (1997, 2001) points out, the marking of mirativity is compatible with hearsay and inference as well as first-hand knowledge. There is a close relationship between evidentiality and mirativity, as linguistic items may encode restrictions on both types of meaning at the same time. Other linguistic markers of mirativity, however, do not restrict evidentiality, and hence the two categories are related but not conflated (DeLancey, 1997, 2001).¹¹⁰ I shall return to *niq* and mirativity in due course, but first, let us establish what the evidential restriction on *niq* is.

Given the collected data, ‘indirect evidentiality’ seems less suitable, now that *niq* can be used when the evidence for the proposition is a direct observation of the very situation represented by the proposition. A more suitable label for the evidential restriction encoded by *niq* may therefore be ‘mediative evidentiality’. As opposed to simple statements unmarked for evidentiality, statements modified by a mediative evidential are “[..] *mediated by (unspecified) references to the evidence. For this reason, this particular kind of evidential operation might be called ‘mediative’.*” (Lazard, 2001: 362). The label is used in Lazard (2001) to describe evidential expressions in Balkan and Middle Eastern languages which have the following three main uses: hearsay, inference, and mirative. In other words, Lazard (2001: 361) notes, the evidential in those languages “*may be used to refer to sayings of other people, to inferences drawn from the evidence of traces of events, or to perceptions of unexpected events at the very moment of speaking.*” A mediative evidential thus indicates the existence of evidence, which covers immediate perception of the event as well as indirect information sources such as inferential or reportative. Markers of mediative evidentiality, which pack these information sources into an unspecified notion of ‘existence of evidence’, are also found in Armenian, Turkish, Bulgarian, Albanian and Tadjik Persian among others (Lazard, 2001). Lazard (2001) uses the paraphrase ‘as it appears’ for expressions of mediative evidentiality, and argues against the erroneous conflation of mediative with decreased certainty; a mediative evidential merely expresses that the statement is mediated by a piece of evidence and thereby points to the existence of evidence without specifying the type of evidence. Mediative evidentiality thus seems to match the observations from the data set regarding *niq* and evidentiality. The question is

¹¹⁰ Speakers of English may, for instance, mark mirativity by means of a certain intonation pattern, the ‘mirative intonation contour’, which does not restrict evidentiality according to DeLancey (2001: 377).

now if *niq* encodes a restriction on mirativity or if *niq* is merely suitable for conveying mirativity as a result of its evidential restriction. Let us consider the data and previous descriptions of *niq* in Uummarmiutun and the closely related North Slope Iñupiaq dialect.

Several data collected for the present study indicate that Uummarmiutun *niq* contributes to the interpretation with the notion of change of epistemic environment, e.g. the realization or surprise that p as in (5.31), (5.32), (5.36), (5.37), (5.39) and (5.40), or the thought that q while in fact p was the case as in (5.34). Also the data and analysis in Berthelin (2012) of North Slope Iñupiaq *niq* suggest that this expression is associated with notions like newly obtained information and realization. On the other hand, MacLean (1986b: 78) states that North Slope Iñupiaq *niq* is “[...] used to confirm or establish that someone is ___ing, or has ___ed”, and MacLean (2014: 563) describes North Slope Iñupiaq *niq* as “to report or state that the subject is or has been V-ing”. Like Lowe’s (1984) description of Uummarmiutun *niq*, MacLean’s (1986b, 2014) descriptions do not indicate that *niq* is associated with the conveyance of new or unexpected information. Moreover, in (5.33) above the sentence with *niq* under discussion does not seem to contain aspects like realization or unexpectedness in the strict sense. Consider also (5.41):

(5.41)

- S: Yeah, let’s say that if you are out picking berries with a young boy, let’s imagine that, and then he looks around and he asks you, are there any foxes here. And then you look around and you can tell that mice are living in this area so you wanna say Yeah, there could be foxes. How would you say that in Uummarmiutun?
 N: How is that again, how, I’m telling that boy ‘Yeah, there could be foxes around’
 S: Yeah
 N: Ii, kayuqtut maani inuuniarrungnarniqhut. Kayuqtut inuuniarungnarniqhut

Sentences under discussion:

Ii, kayuqtut maani inuuniarungnarniqhut¹¹¹
 ii kayuq - tut maa - ni inuu - niaq - hungnaq - niq - hut
 yes fox - IND.3.PL DEM.PROX - LOC be.alive - try - maybe - niq - IND.3.PL
 ‘Yes, there could be foxes around.’

¹¹¹ In *Ii, kayuqtut maani inuuniarungnarniqhut* ‘Yes, there could be foxes around’, *niq* cooccurs with the epistemic modal *hungnaq* ‘probably’. This does not warrant the hypothesis that *niq* does not encode full epistemic force. A more reasonable hypothesis is that *niq* in *Ii, kayuqtut maani inuuniarungnarniqhut* ‘Yes, there could be foxes around’ scopes over *hungnaq*, such that the speaker expresses certainty (based on evidence) that it is possible that there are foxes around.

Also in (5.41), the sentence with *niq* does not appear to be associated with an interpretation where the information is unexpected – at least not to the speaker.

Given data like (5.33) and (5.41) it thus seems too strong to assume that *niq* encodes a special restriction on mirativity in addition to its evidential restriction, since the sentences with *niq* in those cases do not appear to evoke the idea that the information is necessarily new or unexpected to the speaker. Given that *niq* is a mediative evidential, it is expected that *niq* may be used to express surprise in some but not all contexts: the mediative evidential forms discussed in Lazard’s paper “[...] point to the speaker’s becoming aware¹¹² of the facts. In the case of hearsay, for example, the evidential implies ‘as I have heard’; in the case of inference it implies ‘as I infer’; in the case of unexpected perception it implies ‘as I see’.” (2001: 362). Moreover, recall that Lazard (2001: 361) connects the direct perception of the event with the perception of unexpected events at the very moment of speaking. It therefore follows from a description of Uummarmiutun *niq* as restricted to mediated evidentiality in the sense of Lazard (2001) that *niq* may be used to convey that the event was unexpected or surprising to the speaker (probably especially in contexts where it is perceived in the moment of speaking) *without* making the prediction that *niq* expresses unexpectedness on behalf of the speaker whenever it is used.

To conclude: Uummarmiutun *niq* is not a modal expression, because the use of *niq* does not contribute with a notion of less than full epistemic force. Rather, *niq* appears to be restricted to full epistemic force. *Niq* is nevertheless an epistemic expression, and *niq* makes a reference to the existence of a piece of evidence (be it an observation of the state of affairs represented by the proposition, or a state of affairs from which the truth of the proposition is inferred) which yields full force towards the verification of the proposition in its scope. Due to *niq*’s evidential properties as well as the suitability of *niq* as a device for expressing mirativity, *niq* is an expression of ‘mediated evidentiality’ in the sense of Lazard (2001). In Chapter 8 I shall make use of the collected data and the analysis of *niq* presented in the present section, and sketch how the model proposed in Chapter 6 can be used to form semantic proposals, which clearly reflect the specific epistemic properties of different types of epistemic expressions.

¹¹² Emphasis in original.

5.2.6 yumaaq

In the Uummarmiutun dictionary (Lowe, 1984: 195), the meaning of *yumaaq* is described as “*to be planning to, to intend to*”. The meaning of *yumaaq* hence seems to be that a subject-internal source produces a volitional force towards actualization of the event, i.e. *yumaaq* may express bouletic modality like the English modal *want*. Given the entry in Lowe (ibid.), *yumaaq* may therefore be a modal expression. (5.42a-b) are taken from Lowe’s (ibid.) list of example sentences with *yumaaq*. As can be seen in (5.42a), the initial consonant in *yumaaq* assimilates with the final consonant of the stem, while it attaches as *yumaaq* on vowel final stems, as in (5.42b) (see Lowe, 1984: 195, for details):

(5.42)

- | | | | | |
|----|---------------------------------|----|---------------------------------|----------------------------------|
| a. | Havag yumaaq tuq | b. | Qai yumaaq tuq | |
| | havak - yumaaq - tuq | | qai - yumaaq - tuq | |
| | work - <i>yumaaq</i> - IND.3.SG | | come - <i>yumaaq</i> - IND.3.SG | |
| | ‘He is planning to work’ | | ‘He intends to come’ | (Lowe, 1984: 195) ¹¹³ |

Uummarmiutun speakers consulted for the present study however, do not make explicit reference to aspects of intentions or plans in their translations and explanations of sentences with *yumaaq*. It does appear though, that *yumaaq* requires some sort of subject control or potential influence on the actualization of the event. This finding is compatible with Lowe’s (1984: 195) description of *yumaaq* in terms of plans and intentions, given that intentions and plans presuppose that individuals are generally perceived as having influence on the actualization of their intentions or plans:

(5.43)

- S: Can I also say uhh .. agliy**yumaaq**tunga?
J: No. But if you telling stories of business, your business is gonna grow .. If you know. Agliy**yumaaq**tunga.
S: Yeah?
J: That you could say that. I gotta get BIG. Big business hahah!

Sentence under discussion:

¹¹³ The sentences and translations are from Lowe (1984). The segmentation and glossing are done by me based on Lowe (1984, 1985a) and MacLean (2014).

Agliyumaqtunga

agli - yumaaq - tunga

grow - yumaaq - IND.1.SG

'My business grow-yumaaq.' Literally: 'I'm growing-yumaaq'

In (5.43) *agliyumaqtunga* 'I grow-yumaaq' is first rejected, but afterwards it is given a metonymical interpretation where the first person subject marker refers to the speaker's business rather than to herself as an individual. This initial rejection and the following metonymical interpretation suggest that *yumaaq* yields interpretations where the subject referent has influence on the actualization of the event represented by the predicational content. It is possible to influence the growth of a business, while it is harder to influence the growth of one's own body, and the presence of *yumaaq* seems to force the metonymical interpretation in (5.43) such that the first person singular ending refers to the speaker's business. Consider also (5.44) where another consultant rejects *agliyumaqtunga* 'I grow-yumaaq', because it is not up to a person whether she is going to grow:

(5.44)

S: What about *agliyumaqtunga*?

N: Is it up to you to know if you gonna grow or not? [...] *Agliyumaqtunga*. I, I know I'm gonna grow. The kid is saying?

S: Yeah? ... Does that sound like a funny way to say ..?

N: Yeah. [...] That's funny way to saying, because.. it's not up to the kid to .. or xx, a kid could wish, *aglihuktunga*.

Sentences under discussion:

? *Agliyumaqtunga*

agli - yumaaq - tunga

grow - yumaaq - IND.1.SG

? 'I grow-yumaaq.'

Aglihuktunga

agli - huk - tunga

grow - huk - IND.1.SG

'I want to grow.'

(5.43) and (5.44) are thus compatible with Lowe's (1984: 194) description of *yumaaq*, since plans and intentions presuppose the assumption of influence over their actualization; a person cannot plan to grow, but she can plan or intend her business to grow. The findings so far also imply that Uummarmiutun *yumaaq* is similar to its North Slope Inupiaq cognate *yumaaq* "intends, plans to V" (MacLean, 2014: 754). Uummarmiutun *yumaaq* also appears to share properties with its Utkuhikšalingmiutut cognate *jumaaq* which is described as: "might X later, will X at some

indefinite time in the future, will hopefully X' (notes: often implies a hope or wish on the speaker's part that something will happen sometime in the future)" (Briggs et al. 2015: 178).

While some of the data appear compatible with Lowe's (1984) description, other data are surprising given that *yumaaq* allegedly expresses that the subject referent plans or intends to actualize the event. First of all, it seems to be the case that verbs with *yumaaq* can take inanimate subject referents, as in (5.45):

(5.45)

S and J have talked about other sentences in a scenario where a picture is going to fall down from the wall:

- S: Can I also say .. **katagumaaqtuq** ?
J: Yeah.
S: Yeah?
J: Uuuuh .. future. [...] That picture is gonna fall.
S: **Katagumaaqtuq** ?
J: Yeah.
S: And can I also say *katagumafuq* ?
J: ... no

Sentence under discussion:

Katagumaaqtuq
katak - yumaaq - tuq
fall - *yumaaq* - IND.3.SG
'It [=the picture] is gonna fall.'

When the subject referent is inanimate, it is hard to see how *katagumaaqtuq* 'it fall-*yumaaq*' expresses intentions or plans. It should be noted that in (5.45) the interviewer has asked the consultant "Can I say *katakatagumaaqtuq*", which is ill-advised in elicitation as it may invalidate the datum (see Chapter 4, §4.2.3 for discussion). However, J is apparently willing to reject *katagumafuq* 'it fall-*yuma*'¹¹⁴ even though I have asked if I can say this word. It is therefore reasonable to assume that she would also have rejected *katakatagumaaqtuq* if she had not found it felicitous. While further confirmation is desirable, (5.45) does indeed suggest that *yumaaq* may

¹¹⁴ North Slope Iñupiaq has a postbase of the form *yuma* which is described by MacLean (2014: 753) as "to be eager and/or willing to V". Hence the question about *katagumafuq* 'it fall-*yuma*' in order to check if *yuma* is used in Uummarmiutun. *Yuma* is not included in Lowe's (1984) Uummarmiutun dictionary, and responses varied with respect to the acceptance of words with *yuma*. Further attempts to identify the meaning of Uummarmiutun *yuma* will await future research.

take inanimate subjects. (5.46) below is another finding that conflicts with the hypothesis that *yumaaq* is restricted to notions of ‘intentions’ or ‘plans’ (see Lowe, 1984: 195). Here it appears that *yumaaq* may be used in verbs expressing undesirable events, and hence it is hard to see how *yumaaq* contributes with a concept of plan or intention:

(5.46)

- S: Payay**yumaaqtuq** ?
 J: Payay**yumaaqtuq**, he’s gonna starve. Payay**yumaaqtuq** .. Oh! No. Payay**yumaaqtuq**... because is not good hunter, is sick or .. he’s gonna starve. Payay**yumaaqtuq**. [...] You gotta help him. Everybody, anybody in uhh .. in the Delta when they heard that that guy is gonna starve, they go.
 [..]
 S: Okay, so it’s like it’s serious, we know for sure this guy is going to starve, and we gotta do something?
 J: Yeah. Payay**yumaaqtuq**. But if he’s got nothing, he’s gonna starve.

Sentence under discussion:

Payay**yumaaqtuq**
 paya - yumaaq - tuq
 starve - *yumaaq* - IND.3.SG
 ‘He is gonna starve.’

It could be that *yumaaq* like *huk* (analyzed in §5.3.3) encodes a more general concept of force from a subject-internal source, rather than being specified to *intentional* or *volitional* force from the subject referent’s *desires*. In that case, we could hypothesize that the encoded concept of a force from the subject-internal source may be narrowed down to a concept of intentions or plans in some (but not all) contexts if and only if the subject referent is animate and hence may be assumed to be in control of the actualization of the event (see Johns, 1999, for a similar account of Inuttut *guma*, Qairnirmiut *huaq* and Yupik *yug*). This would predict the appearance of ‘is planning’ and ‘intends’ in the translations of Lowe’s (1984: 195) sentences with *yumaaq* in (5.42) above. The account would also predict that *katag**yumaaqtuq*** ‘it fall-*yumaaq*’ in (4.45) is interpreted such that it makes a reference to the internal properties of the picture as the source for the actualization of it falling down, however obviously without aspects of intentions since the subject referent is inanimate. Last but not least, the hypothesis that *yumaaq* encodes subject-internal modal meaning would predict (5.46), because it seems that *payay**yumaaqtuq*** ‘he starve-*yumaaq*’ is interpreted such that something subject-internal – i.e. the person’s sickness or lacking hunting skills – produce the

force towards the actualization of him starving. Contrary to *huk*, though, *yumaaq* seems to evoke the idea of subject *control* or at least influence in cases of animate subject referents, while *huk* does not seem to have such restriction judging from data like (5.44).

It is interesting to note that some consultants' responses at times indicate that *yumaaq* is not part of the Uummarmiutun language. The consultant who gave (5.46) above reported afterwards that the word *payayumaaqtuq* sounded like a Siglitun word. Another consultant rejected all words with *yumaaq* and reported that she had not heard them before. At another occasion, a consultant was asked about the meaning of the word *niqhiturumaaqtunga* 'I eat meat-*yumaaq*' but corrected the word to *niqhituruktunga* 'I eat meat-*huk*', which she translated into 'I want meat'. Moreover, *yumaaq* in the closely related North Slope Iñupiaq dialect is described as being 'limited' in MacLean (2014: 754). These observations suggest that *yumaaq* may not be a very common expression in Uummarmiutun.¹¹⁵ Further research is needed to determine the exact extension of use and markedness of *yumaaq* in Uummarmiutun.

In conclusion, Lowe's (1984) examples as well as the collected data are compatible with a categorization of *yumaaq* as a modal expression, because the interpretations associated with sentences with *yumaaq* contain aspects of *unrealized* force-dynamic potential. More specifically, *yumaaq* expresses partial force from a subject-internal source towards the actualization of the predicational content. According to Lowe (1984: 194), *yumaaq* expresses plans and intentions, which here corresponds to a restriction on subject-internal source producing a volitional force. The collected data suggest that the encoded meaning of *yumaaq* is slightly broader. It turns out that *yumaaq* a) may be compatible with inanimate subject referents, and b) may be used when the verb expresses an undesirable state of affairs. The hypothesis put forward based on the collected data is that *yumaaq* merely locates the modal source internal to the subject referent, such that the modal force comes from properties internal to the subject referent, be they intentions, physical states, skills or other properties. The meaning of *yumaaq* seems to overlap significantly with the meaning of *huk*, which also appears to be restricted to subject-internal meaning (see §5.3.3). However, when used with human subjects, *huk* may be more suitable than *yumaaq* when the subject has no control

¹¹⁵ That *yumaaq* is in fact a Siglitun expression rather than an Uummarmiutun expression in spite of its appearance in the Uummarmiutun dictionary (Lowe, 1984) is further supported by the following: some Inuvialuit feel that there was a bit of dialect overlap involved in the work on the Uummarmiutun and Siglitun dictionaries in the mid 1980s (Alana Johns, p.c. December, 2016).

over the actualization (as in (5.44)). *Yumaaq* will not be considered further in the present study. Questions left for future research on *yumaaq* pertain mainly to how common or marked the use of *yumaaq* is in Uummarmiutun, given some consultants' association of this expression with the Siglitun dialect. Moreover, it should be checked whether *yumaaq* has in fact acquired a less restrictive simple 'future' use – a development which is attested for other bouletic modal expressions cross-linguistically (see e.g. Heine and Kuteva, 2002: 310-311) – especially in combination with inanimate subject referents as in (5.45).

5.2.7 *viaq*

The Uummarmiutun dictionary (Lowe, 1984) provides the following description in the entry for *viaq*, where the use of the English modal *might* suggests that *viaq* encodes epistemic modal meaning: “*might (in the sense of potential consequence) [...] generally preceded by a word in the negative imperative or conditional form*” (ibid.: 191). In addition to modal meaning, the description that Lowe provides indicates that *viaq* generally occurs in the apodosis clause following a conditional or imperative construction, e.g. as in the examples from Lowe (1984) in (5.47). *Viaq* attaches directly to vowel final stems as in (5.47a), and changes to *piaq* if the stem ends in a consonant as in (5.47b) (ibid.).¹¹⁶

(5.47)

- a. Niq̄iuruvit, qai**viaq**tuq.
 niq̄iuq - ruvit qai - **viaq** - tuq
 cook.a.meal - COND.2.SG come - *viaq* - IND.3.SG
 ‘If you cook a meal, he might come.’

¹¹⁶ The realization of *viaq* ‘might’ as *piaq* should not be confused with the postbase *piaq* ‘really, truly’. Unlike *viaq*, *piaq* deletes the final consonant of the stem (see Lowe, 1984: 155). Compare the following:

<i>Navik</i> <i>piaq</i> tuq	<i>Navip</i> <i>piaq</i> tuq
navik - viaq - tuq	navik - piaq - tuq
<i>break</i> - <i>might</i> - IND.3.SG	<i>break</i> - <i>really</i> - IND.3.SG
‘It might break’	‘It really broke’, i.e. it broke completely (Field notes)

- b. Mayurarnak, katak**pi**aqutin
 Mayuq - aq - nak katak - viaq - tutin
 climb - prolonged - NEG.IMP.2.SG fall - *viaq* - IND.2.SG
 ‘Don’t climb, you might fall off.’ (Lowe, 1984: 191)¹¹⁷

In accordance with the topic of the thesis, the present section will aim at determining whether *viaq* is a modal expression. Two other properties that Lowe (1984) seems to associate with *viaq* will be revisited in the light of the collected data, namely a) that *viaq* is generally preceded by a negative imperative or conditional form and b) the alleged restriction on ‘potential consequence’.

The collected data confirm that sentences with *viaq* may appropriately be preceded by a clause in the negative imperative or the conditional mood – as predicted by Lowe (1984) – and shows that other non-finite clauses e.g. with non-negative imperative mood marking may also occur in the immediate linguistic context of a sentence with *viaq*. In (5.48) below, the consultant is elaborating on the meaning of *niriviaraa* ‘she eat it-*viaq*’. She was not asked to make a sentence with the word, but she apparently prefers the presence of the imperative clause *Tutqurlugu!* ‘Put it away!’ in front of *niriviaraa* in order to contextualize and explain the meaning of *niriviaraa*:

(5.48)

- L: [...] *Niriviaraa* .. Sally might eat it .. they might eat it, put it away. It’s like.. they don’t want you to eat it, they .. it’s almost like uhm.. Sally might eat it *Tutqurlugu!* Put it away!
 S: Ooooooh so it has to be in a situation, like this might happen, so you have to do something ..
 L: Yeeeeeaaah! [...] They don’t want it. Maybe they had a special something put out. *Tutqurlugu* Sally *niriviaraa*. Put it away for after, so Sally don’t eat it right now. Maybe after, maybe piece of *maktak* for my mom.

Sentences under discussion:

<i>Niriviaraa</i>	<i>Tutqurlugu!</i>
niri - viaq - raa	tutquq - lugu
eat - <i>viaq</i> - IND.3.SG.SUBJ.3.SG.OBJ	put.away.for.future.use - CONJ.2.SG.SUBJ.3.SG.OBJ
‘She might eat it.’	‘Put it away [for future use]!’
<i>Tutqurlugu, Sally niriviaraa</i>	
tutquq - lugu	S. niri - viaq - raa
put.away.for.future.use - CONJ.2.SG.SUBJ.3.SG.OBJ	[NAME] eat - <i>viaq</i> - IND.3.SG.SUBJ.3.SG.OBJ
‘Put it away [for future use], Sally might eat it.’	

¹¹⁷ The sentences and translations are from Lowe (1984). The segmentation and glossing are done by me based on Lowe (1984, 1985a) and MacLean (2014).

That a sentence with *viaq* follows an imperative or another non-finite clause is however, as Lowe (ibid.) also indicates, no more than a tendency. In (5.49), the consultant merely wishes to add a lexical time reference – *uvlupak* ‘today’ – to the clause with *viaq* to make it a complete sentence:

(5.49)

- S: What about a sentence like this one, if I say Peter katim**viaq**tuq. Does that sound like a complete sentence?
- N: He might, go to meeting.
- S: Does it sound like a complete sentence or does it sound kind of .. cut off ..
- N: Hmmm You have to .. add .. few words to it. .. You gotta put either *uvlupak*. Peter *uvlupak* katim**viaq**tuq. You gotta uhh .. finish that (=the sentence) up. Because you don't know where he's gonna meet or what time he's gonna meet and people like to know where the date he's gonna meet. So you say today. Today Peter might go to meeting.
- S: Peter *uvlupak* katim**viaq**tuq.
- N: Yeah. He might go to meeting.

Sentences under discussion:

Peter *uvlupak* katim**viaq**tuq
P. uvluq - pak katima - viaq - tuq
[NAME] day - during meet - *viaq* - IND.3.SG
‘Today Peter might go to a meeting.’

Given Lowe's (ibid.) description of *viaq* through English ‘might’, *viaq* appears to be a modal expression, as *might* is used to express less than full certainty, more precisely neutral epistemic force (‘epistemic possibility’). That *viaq* is an expression of decreased certainty is confirmed by data like (5.50). In (5.50), the consultant was asked about the meaning of *katangniaqtuq* ‘it will fall’, for which she provides a scenario indicating that the sentence expresses a firm assumption about the future. When asked to compare *katangniaqtuq* ‘it will fall’ with the corresponding sentence with *viaq*, *katak**piaq**tuq* ‘it fall-*viaq*’, it appears that the latter expresses less than full certainty:

(5.50)

- N: If I put a picture up, and it's too close to the door, *katangniaqtuq*. It's gonna fall down. You warned somebody about it already. You warn somebody. Don't put it there, it's gonna fall!
- S: How would you put it in a sentence like Don't put it there, it's..
- N: Tavfungarnagu *katangniaqtuq*
- S: What if somebody said Tavfungarnagu *katak**piaq**tuq* ?

seem to be a sense of potential consequence, in that the clause modified by *viaq* expresses a state of affairs whose actualizational potential relates somehow to whether or not the state of affairs expressed by the preceding clause is actualized.¹¹⁸ In cases like (5.49) above, however, such consequence aspect is not evident. Also in (5.52) below the notion of consequence does not seem to be part of the interpretation; here *viaq* appears to contribute with the meaning that p ‘Peter go to Aklavik’ might be true in the future given the *knowledge that q* i.e. ‘Peter was thinking about going to Aklavik’. That is, the future verification of p is supported by knowledge that q rather than a potential cause-effect relation between q and p:

(5.52)

- S: If we say, we imagine that this girl Nina she’s thinking about asking Peter to go hunting with her tomorrow. [...] She wants to go out hunting with him, and she’s thinking about it and she tells me, and then I uhm .. I remember a while ago that Peter was thinking about going to Aklavik tomorrow. Can I then say to her Peter Aklavingmuk**piaqtuq** ?
- N: ... You already heard that he might go to Aklavik
- S: Yeah
- N: Yeah! Yeah, mmhmm. [...] Oh yeah, **-piaqtuq** is uhhh ... uhh you’re not sure, .. and yet you know that’s what he was talking about. Yeah, that’s what he was talking about. You heard him talking about going to Aklavik.

Sentence under discussion:

Aklavingmuk**piaqtuq**
 Aklavik - muk - *viaq* - tuq
 Aklavik - go.to - *viaq* - IND.3.SG
 ‘He might go to Aklavik.’

Also in (5.53), the future verificational potential of the proposition in the scope of *viaq* is related to knowledge, more specifically the observation of the equipment in the room:

(5.53)

- S: So what if we say that you walk into the house, and you see that it’s.. everything is there, the mike, a big aula¹¹⁹ or something, and you see all the chairs are lined up in a circle, and all the interpretation gear is there. Can you then say katimaniarunnaqtut ?

¹¹⁸ In (5.47a) the state of affairs expressed by the clause in the scope of *viaq* might be actualized if the state of affairs expressed by the preceding clause is. And in (5.47b) the state of affairs expressed by the clause in the scope of *viaq* might be actualized if the subject referent refrains from following the order expressed by the preceding clause.

¹¹⁹ *Aula* is used in my native language Danish with the meaning ‘assembly hall’. I later discovered that *aula* is not used in English. L nevertheless seems to know what I mean on the basis of the description of the scenario.

- L: Yeeees, like if I had no knowledge about it, and I walked in and I go oooh katimaniarungnaqtut, people, somebody's gonna have a meeting must be. They're gonna .. the setting tells me that something's gonna happen here, some kind of meeting. But I don't know what kind.
[..]
- S: Can you also say katimaviaqtut in that situation?
- L: Probably, cause there is that evidence there. Probably! Like yeah, that katimaviaqtut, aaah must be there, there's gonna be something happening here.

Sentences under discussion:

Katimaniarungnaqtut	Katimaviaqtut
katima - niaq - hungnaq - tut	katima - viaq - tut
meet - FUT - must/maybe - IND.3.PL	meet - viaq - IND.3.PL
'They're gonna have a meeting, must be.'	'There must ¹²⁰ be a meeting there (later).'

Given data like (5.49), (5.52) and (5.53), MacLean's description of North Slope Iñupiaq *viaq* as "might *V* if given the chance or opportunity" (2014: 589) appears to be more in accordance with the Uummarmiutun speaking consultants' explanations of sentences with *viaq* than Lowe's (1984) description of Uummarmiutun *viaq*. Contrary to Lowe's (1984) description, which includes that the predicational content in *viaq*'s scope is a potential *consequence*, MacLean's (2014) description does not include such restriction. MacLean (ibid.) therefore correctly predicts the epistemic interpretations of sentences with *viaq* in data like (5.52) and (5.53). The speaker who utters Aklavingmukpiaqtuq in (5.52) may indeed convey that given what she knows, Peter might go to Aklavik if given the chance, and the speaker of *katimaviaqtut* in (5.53) may indeed convey that given her observation of the meeting equipment, the people might meet here if nothing stops them.

In sum, *viaq* appears to scope over the content of an apodosis sentence and hence refers to (see (5.47), (5.48) and (5.50)) or evokes (see (5.52) and (5.53)) the thought of a state of affairs or a proposition that forms the basis for the future verificational potential of the proposition in its scope. Given data like (5.49), (5.52) and (5.53),¹²¹ *viaq* does not seem to restrict a cause-effect relation, and hence 'potential consequence' is too narrow in a description of *viaq*. Rather, what all the data seem to have in common is the assumption that the proposition in the scope of *viaq* might be true of the future, and hence the hypothesis that *viaq* restricts verificational force. Moreover, the data show that in (5.47), (5.48), (5.49) and (5.50) as well as in cases like (5.52), *viaq* contributes

¹²⁰ Other sentences with *viaq* are translated with the neutral force modal *might*. As this is the only time a consultant uses the partial force modal *must* in a translation of a sentence with *viaq*, I shall not speculate whether *viaq* encodes partial force in addition to neutral force.

¹²¹ See also (5.56) below.

with neutral force. Given the consultant's use of *must* in the translations of *katimaviaqtut* 'they have a meeting-*viaq*' in (5.53), it appears that *viaq* can also be used to express partial epistemic force. (5.53) is however the only datum indicating that *viaq* is compatible with partial force. I therefore conclude that *viaq* is a neutral epistemic force modal. Future research should seek to confirm whether *viaq* is in fact restricted to neutral force, or whether a semantics including the notion of less than full force is more appropriate. A thorough analysis of the interaction of *viaq* with conditional mood also awaits further research.

An interesting tendency in the data set is that interpretations of sentences with *viaq* often seem to include an attitude towards the potential state of affairs as something that should be avoided, i.e. an 'apprehensional' attitude (see Lichtenberk, 1995). Apprehensional attitude is not present in all interpretations of sentences with *viaq*, and hence it is not the case that *viaq* is restricted to apprehensional meaning, e.g. like the expression *ada* in To'aba'ita (Oceanic) is (see *ibid.*). The tendency should nevertheless be recognized in order to facilitate future studies of *viaq*. Consider L's explanation in (5.54) of the difference between *Igluliuqpiiaqtuq* 'he build house-*viaq*' and *Igluliurniarungnaqtuq* 'she will probably/might build a house':

(5.54)

L: Something like you're trying to prevent whatever that thing is happening. Just so that her house doesn't go there. But you have to say *maani*. Like I said *Igluliuqpiiaqtuq maani*, she might build her house right there, but I want her to build her house over there. And that other one *igluliurniarungnaqtuq*, Polly's probably, might build her house – you know – *igluliurniarungnaqtuq*, Polly's probably gonna build her house. Polly's been talking about building a house, so she's probably gonna build it.

Sentences under discussion:

<i>Igluliuqpiiaqtuq maani</i>	<i>Igluliurniarungnaqtuq</i>
iglu - liuq - viaq - tuq maa - ni	iglu - liuq - niaq - hungnaq - tuq
house - build - <i>viaq</i> - IND.3.SG DEM.PROX - LOC	house - build - FUT - IND.3.SG
'She might build her house right there'	'She's probably gonna build her house.'
(But I want her to build it over there.)	

Also (5.48) above and (5.55) and (5.56) below indicate that the predicational content in the scope of *viaq* is considered unfortunate. In (5.48) above, the consultant adds *Tatqurlugu!* 'Put it away!' in her explanation of the sentence *niriviaraa* 'she eat it-*viaq*', and the scenario is such that it should be prevented that the subject referent eats the maktak. In (5.55) below, another consultant suggests

that the sentence with *viaq* under discussion occurs with a sentence encouraging the prevention of the actualization of the predicational content:

(5.55)

S has asked N to make a sentence with *tuniviaraa* ‘she sell it-*viaq*’:

- N: ... *Tuniviaraa*... oh .. Tutqurung una, *tuniviaraa*. Put it away! He she might sell it.
 S: Ookay!
 N: Might sell it! He she might sell it, or somebody might sell it. Or, He she might sell it!
 [..]
 S: Could we .. can I say this in a context where let’s say that I .. I want him to sell it, so maybe say ‘Put those things there, he might sell them’. Because I want him to.
 N: Oh, you want them to show. The stuff like uhm, put this right here to he might.. so he could sell it?
 S: Yeah
 [..]
 N: Let’s say something. Kammak? Shoes.
 S: Yeah! Put these shoes here, he could sell them
 N: Kammak ukuak tavrungakkik tuniyumagaik. Tuniyumagaik, so he could sell them. Put those over there, those mukluks over there, so he could sell them.
 S: So we couldn’t say .. *Tuniviagaik* ?
 N: No. You’re .. -*viaraik*, you don’t want him to.

Sentences under discussion:

Tutqurung una, tuniviaraa
 tutquq - rung un - na
 put.away.for.future.use - IMP.2.SG.SUBJ.3.SG.OBJ DEM.EXT.VIS - PRON.DEM.SG.ABS

tuni - *viaq* - raa
 sell - *viaq* - IND.3.SG.SUBJ.3.SG.OBJ
 ‘Put it away, he might sell it!’

Kammak ukuak tavrungakkik tuniyumagaik
 kamik- mak ukuak tavrungaq - kkik
 shoe - DU DEM.DU put.near.listener - IMP.1.SG.SUBJ.3.DU.OBJ

tuni - yuma - gaik
 sell - want - 3.SG.SUBJ.3.DU.OBJ
 ‘Place those shoes over there, so he could sell them.’

Tuniviagaik
 tuni - *viaq* - gaik
 sell - *viaq* - IND.3.SG.SUBJ.3.DU.OBJ
 ‘He might sell them’ (speaker does not want him to)

The chosen imperative clauses and the chosen scenarios for the sentences with *viaq* in cases like (5.55) suggest that *viaq* is associated with a call for intervention such that the predicational content will not be actualized. Consider also (5.56) below. Here the consultant's elaboration on *kallukpiaqtuq* 'it thunder-*viaq*' is another example of the association of *viaq* with apprehensional attitude and the call for intervention. (5.56) is however different from (5.48), (5.54) and (5.55) in that there is no way of affecting the actualization of the predicational content. The call for action that seems to be implied by the utterance of *kallukpiaqtuq* is rather a sort of mitigation i.e. to go inside now that there is a risk that it might thunder:

(5.56)

L: You know – *kallukpiaqtuq* ... *kullukpiaqtuq*.. there's a possibility of it thundering.. It might .. something .. I connect that *piaqtuq* with it might thunder. Go inside, or cover your hair! It might thunder.

Sentence under discussion:

Kallukpiaqtuq
kalluk - *viaq* - *tuq*
 thunder - *viaq* - IND.3.SG
 'It might thunder!'

Given the tendency that consultants choose to explain sentences with *viaq* in relation to contexts including a call for intervention, it appears that sentences with *viaq* are closely associated with apprehensional attitude. This does not, however, mean that *viaq* encodes apprehension. When asked directly if a given sentence with *viaq* makes it sound like the speaker does not want the predicational content to happen, the consultants' responses vary between endorsement and rejection. Consider also (5.57) below, where N offers a sentence with *viaq* as a translation of a sentence where the potential actualization of the predicational content is clearly very positive:

(5.57)

S: I was wondering if we could say to somebody like 'Go and visit your grandfather, he might tell a story'. And how you would say that in Uummarmiutun ?
 [..]
 N: Go visit, Pulaarung taanan, [...] *quliaqtuarutiviraatin*
 S: and does it sound like happy like..
 N: Yeeeeah! Hahah

5.2.8 yumiñaq

The Ummarmiutun dictionary (Lowe, 1984) describes the meaning of *yumiñaq* as follows: “*to be permissible, possible for one to; may, could*” (ibid.: 197). Some of the examples provided for *yumiñaq* in Lowe (ibid.) are rendered in (5.58) below. As the examples show, the initial sound in *yumiñaq* undergoes assimilations, sometimes producing geminates, depending on the properties of the final consonant of consonant final stems. *Yumiñaq* attaches directly to vowel final stems (ibid.):

(5.58)

- a. Hiñikkumiñaqtuq
hiñik - yumiñaq - tuq
sleep - *yumiñaq* - IND.3.SG
‘He may sleep’
- b. Aullarumiñaqtuq
aullaq - yumiñaq - tuq
leave - *yumiñaq* - IND.3.SG
‘He has permission to leave’
- c. Nuutchumiñaqtuq
nuut - yumiñaq - tuq
move.to.another.place - *yumiñaq* - IND.3.SG
‘He could move to another place’
- (Lowe, 1984: 197)¹²²

Given Lowe’s (ibid.) description of *yumiñaq* in terms of the English neutral force (‘possibility’) modal *may* and the expression *permission*, it appears that *yumiñaq* can be used to express neutral social force (‘deontic possibility’). Moreover, it appears from Lowe’s description that *yumiñaq* may also be used to express neutral physical force (‘dynamic possibility’) given his use of *could* and *possible for one to* in the description. That is, Lowe’s description suggests that *yumiñaq* covers the root modal meanings social and physical force.

The collected data confirms that *yumiñaq* is restricted to root modal meaning; epistemic interpretations of *yumiñaq* are rejected, e.g. as in (5.59):

(5.59)

- S: Let’s say that if you are out picking berries with a young boy, let’s imagine that, and then he looks around and he asks you, are there any foxes here. And then you look around and you can tell that mice are living in this area so you wanna say ‘Yeah, there could be foxes’. How would you say that in Ummarmiutun?

¹²² The sentences and translations are from Lowe (1984). The segmentation and glossing are done by me based on Lowe (1984, 1985a) and MacLean (2014).

- N: How is that again, how, I'm telling that boy 'Yeah, there could be foxes around'?
- S: Yeah
- N: Ii, kayuqtut maani inuuniarrungnarniqhut. Kayuqtut inuuniarungnarniqhut
- S: Can you also say Inuuniar**umiñ**arniqhut ?
- N: (shakes head) You're saying again, the foxes could live around here if they want.
- S: As in 'it's okay with me' or?
- N: Yeah, it's okay with you. You give permission to the foxes to live there.

Sentences under discussion:

Ii, kayuqtut maani iñuuniarungnarniqhut

ii kayuq - tut maa - ni inuu - niaq - hungnaq - niq - hut
 yes fox - 3.PL DEM.PROX - LOC be.alive - try - maybe - EVID - 3.PL
 'Yes, there could be foxes here.'

Kayuqtut maani inuuniar**umiñ**arniqhut

kayuq - tut maa - ni inuu - niaq - yumiñaq - niq - hut
 fox - 3.PL DEM.PROX - LOC be.alive - try - *yumiñaq* - EVID - 3.PL
 'Foxes could live here.' (permission)

Moreover, when *yumiñaq* combines with the epistemic modal *hungnaq* 'probably', the latter occupies the position closest to the verb ending, which is the position of epistemic modals (recall Chapter 2, §2.4.1), while *yumiñaq* cannot be used in this position:

(5.60)

a. Accepted

yumiñaq + *hungnaq* Aniyumiñarungnaqtuq
 ani - **yumiñaq** - **hungnaq** - tuq
 leave - may/can - maybe - IND.3.SG
 'Maybe he could go out'

b. Rejected

hungnaq + *yumiñaq* * Tunihungnarumiñaraa
 tuni - **hungnaq** - **yumiñaq** - tuq
 sell - maybe - may/can - IND.3.SG.SUBJ.3.SG.OBJ

As it appears from N's response in (5.59), *yumiñaq* is associated with the expression of permission. Further indication that *yumiñaq* is closely associated with permission is data like (5.61). Here the consultant has been asked about the meaning of the sentence *utirumiñaqtuq* 'he return-*yumiñaq*', and chooses to describe a scenario for the sentence where the communication intention contains permission:

(5.61)

- S: Utirumiñaqtuq ?
N: Utirumiñaqtuq. If you kick somebody out. And you're telling somebody else, Yeah. He could come back. He could come back .. If you see him, tell him he could come back. Yeah. He was gone, you kicked him out, but if you see him up town, tell him he could come back.

Sentence under discussion:

Utirumiñaqtuq
utiq - yumiñaq - tuq
return - *yumiñaq* - 3.SG
'He could come back.'

Also (5.62) shows that *yumiñaq* is associated with the expression of permission. In (5.62), N, J and S are talking about the difference between *niriyumiñaqtuq* 'she eat-*yumiñaq*' and *nirillařuq* 'she can eat':¹²³

(5.62)

- S: What if I say *nirillařuq* ?
J: She's not sick, you could eat.
N: Tiny little different.
J: Cause she's not sick.
N: *Nirillařuq*
S: And the other one is..
N: .. Go ahead, she could eat. Go ahead

Sentences under discussion:

<i>Nirillařuq</i>	<i>Niriyumiñaqtuq</i>
niri - lla - řuq	niri - yumiñaq - tuq
eat - can - 3.SG	eat - <i>yumiñaq</i> - 3.SG
'She could eat.'	'She could eat (go ahead).'

In spite of the close association of *yumiñaq* with social circumstances, it appears that *yumiñaq* may also be used to relate the actualization of the predicational content to physical circumstances, e.g. like the physical properties of the subject referent as in (5.63), and (5.64):

(5.63)

- S: And *aniyumiñarungnaqtuq* ?

¹²³ See §5.3.4 for analyses of data on *lla*.

J: Aniyumiñarungnaqtuq .. just asking question there .. maybe he's not crippled, maybe he could go out.

Sentence under discussion:

Aniyumiñarungnaqtuq
ani - yumiñaq - hungnaq - tuq
go.out - *yumiñaq* - maybe - IND.3.SG
'Maybe he could go out (given that he is not crippled).'

(5.64)

S is asking J about the meaning of words the *Nikhaakumiñaqtuq* 'she burp-*yumiñaq*' and *Nikhaallañuq* 'she burp-*lla*':

- J: Nikhaakumiñaqtuq he could .. he's not sick, he could burp. Nikhaakumiñaqtuq.
S: Can you also say Nikhaallañuq ?
J: Yeah! He could, he could burp.
S: What's the difference between saying, about the baby, Nikhallañuq, and, Nikhaakumiñaqtuq ?
J: uh, you're, you're saying ... It's just about same. But .. Nikhaakumiñaqtuq – you know – ... and is not sick, he could burp. He got ... – you know – .. that .. baby could burp.
S: Yeah? And, and what about nikhallañuq ?
J: He could .. burp.
S: Is that also like, because he's not sick and he .. or is it different from ..
J: Yeah he's, because he's not sick, he could, burp.

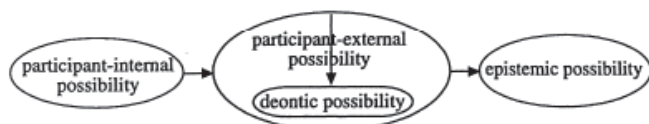
Sentences under discussion:

Nikhaakumiñaqtuq	Nikhaallañuq
nikhaak - yumiñaq - tuq	nikhaak - lla - ñuq
burp - <i>yumiñaq</i> - IND.3.SG	burp - <i>lla</i> - IND.3.SG
'He could burp'	'He could burp'

(5.63) and (5.64) show that *yumiñaq* can be used to express subject-internal physical force, i.e. the actualization of the predicational content is related to properties internal to the subject referent, more specifically his physical properties. The collected data do not confirm whether the meaning of *yumiñaq* can be used to express subject-external physical force. There are nevertheless two good reasons to expect that the meaning of *yumiñaq* does indeed cover subject-external physical force. The first reason is that the data set shows that *yumiñaq* may be used to express neutral social force ('deontic possibility'), which is inherently an external location of the source. The second reason is that there is cross-linguistic evidence that linguistic expressions suitable for expressing neutral subject-internal physical force plus neutral social force are also suitable for expressing neutral subject-external physical force (van der Auwera and Plungian, 1998). These cross-linguistic

observations are reflected in the semantic map of modal possibility in van der Auwera and Plungians's (1998: 87) paper, which is largely based on Bybee et al. (1994):

Figure 5.3: Semantic map of modal possibility



(van der Auwera and Plungian, 1998: 87)

Van der Auwera and Plungian (1998) explain the rationale behind semantic maps as follows: “A semantic map is a geometric representation of meanings or, if one likes, uses, and of the relations between them. Meanings/uses and their connections thus constitute a semantic space” (1998: 86). A semantic map is based on cross-linguistic synchronic and diachronic evidence. That is, semantic maps are constructed such that they reflect polysemy found cross-linguistically and predict possible diachronic semantic paths. Semantic maps also predict that if one finds that the meaning of a linguistic expression covers two meanings interrupted by another meaning, then the expression covers this intermediate meaning too. As for the map rendered above, it reflects that cross-linguistically, expressions which are used to express participant-internal possibility (our subject-internal neutral physical force) plus deontic possibility (our neutral social force) can also be used to express participant-external possibility (our subject-external neutral physical force). In addition to the theoretical predictions that *yumiñaq* should be suitable for expressing subject-external physical force, consider (5.65) below:

(5.65)

N compares *hiñigumiñaqtuq* ‘he sleep-*yumiñaq*’ and *hiñillařuq* ‘he sleep-*lla*’:

N: Because there is space for that person, *hiñigumiñaqtuq*, there’s a space for that person to sleep there. And *hiñillařuq* is ‘already there is a space for that person there’. And the other one is *hiñigumiñaqtuq*, ‘Yeah, you could sleep on my couch or you could sleep on my bed’.

Sentences under discussion:

Hiñigumiñaqtuq

hiñik - yumiñaq - tuq

sleep - *yumiñaq* - IND.3.SG

‘He can sleep (because there is space).’

Hiñillařuq

hiñik - lla - řuq

sleep - *lla* - IND.3.SG

‘He can sleep.’

It could seem that *hiñigumiñaqtuq* is paired with a social force interpretation in (5.65), since the couch or bed belongs to the speaker in the scenario. Note however that the consultant begins the description of the scenario with indicating that there is space. It thus seems that it is the physical circumstances that make the actualization of the event possible. (5.65) – together with the theoretical predictions – therefore indicates that *yumiñaq* may be used to express subject-external physical force.

The data set shows that *yumiñaq* can be used to relate the actualization of the predicational content to social as well as to physical circumstances. As for modal force, the collected data does not indicate that *yumiñaq* may be used to express partial force. Rather, all data point in the direction that *yumiñaq* restricts neutral force. A reasonable conclusion is that *yumiñaq* is an expression of neutral physical and social modal force, which is in accordance with Lowe’s description of *yumiñaq*; “to be permissible, possible for one to; may, could” (1984: 197). It is interesting to note however, that the postbase *lla* which Lowe describes as “to be able to; can” (1984: 177) also turns out to cover social and physical neutral force (see §5.3.4 on *lla*). A legitimate question is therefore what distinguishes the two expressions. The available data on *yumiñaq* is not sufficient to draw solid conclusions regarding what exactly distinguishes *yumiñaq* from *lla*. The remainder of the section presents the hypotheses that can be derived from the data set to shed light on the matter.

Recall (5.64) above, where the consultant compares the sentences *Nikhaakumiñaqtuq* ‘he burp-*yumiñaq*’ and *Nikhaallañuq* ‘he burp-*lla*’. It is interesting to note that when asked about the meaning of *Nikhaakumiñaqtuq* ‘he burp-*yumiñaq*’, she offers a translation plus an explication of the modal source, i.e. “he’s not sick”. When asked about *Nikhaallañuq* ‘he burp-*lla*’, she merely gives a translation and only refers to the modal source when asked explicitly if *Nikhaallañuq* ‘he burp-*lla*’ is compatible with ‘he’s not sick’. Also (5.66) below suggests that sentences with *yumiñaq* are more closely associated with the identification of the modal source than sentences with *lla* other things being equal:

(5.66)

S has asked L about the difference between *aniyumiñaqpa?* ‘he go out-*yumiñaq?*’ and *anillava?* ‘he go out-*lla?*’:

- L: (about *anillava*?) It's just 'Can he go out?' Not even considering any of whatever like .. not even considering his handicap or his illness, it's just 'Can he go out?'. .. But his one, *aniyumiñaqpaa*?¹²⁴ means .. you're getting a little bit more into it, you say .. Considering his – you know – got pneumonia
- S: Yeah?
- L: *Aniyumiñaqpaa* – you know – is he allowed to .. Will me taking him out affect him or [...] Like whatever it is he's going out .. Whatever he has, will taking him on an out be good for him. You know – like it's more in-depth.

Sentences under discussion:

Anillava	Aniyuminaqpa
ani - lla - va	ani - yumiñaq - pa
go.out - lla - INT.3.SG	go.out - yumiñaq - INT.3.SG
'Can he go out?'	'Can he go out? (considering his condition)'

According to L's elaboration in (5.66), *aniyumiñaqpa* 'he go out?-yumiñaq' is "more in-depth" with a clearer reference to the intended modal source, here the subject referent's physical state. Recall also (5.65) above, where the consultant identifies the modal source and presents it as the reason for the actualizational potential when she explains the meaning of *hiñiyumiñaqtuq* 'he sleep-yumiñaq'. In her explanation of the corresponding sentence with *lla*, on the other hand, these circumstances do not appear to be in the foreground of the interpretation, i.e. "there is already space". Given data like (5.64), (5.65) and (5.66), it is clear that *yumiñaq* and *lla* may be used in the same contexts, take the same modal sources and express the same modal force. The difference seems to be that *yumiñaq* restricts the interpretation such that the modal source is identified more specifically during the interpretation process, whereas *lla* does not require the identification of the specific modal source.

¹²⁴ Some consultants prefer a long vowel in interrogative endings.

5.3 In-depth analyses of four Uummarmiutun modals

5.3.1 *řukřau*

5.3.1.1 Research questions

In the Uummarmiutun dictionary (Lowe, 1984: 170), the meaning of *řukřau* is described as “*must, has to*”,¹²⁵ and the most natural interpretations of the English translations of the example sentences provided contain notions of partial root modal force as in (5.67). After consonant final stems the allomorph *tukřau* is used as in (5.67a), and after vowel final stems the form *řukřau* remains unchanged as in (5.67b-c) (see Lowe, *ibid*):

(5.67)

- | | | | |
|----|--|----|--|
| a. | Hiñik tukřau řuq
hiñik - řukřau - řuq
sleep - <i>řukřau</i> - IND.3.SG
'He must sleep' | b. | Niri řukřau řuq
niri - řukřau - řuq
eat - <i>řukřau</i> - IND.3.SG
'He has to eat' |
| c. | Qaunakři řukřau řuq
qaunakři - řukřau - řuq
take.care/look.after - <i>řukřau</i> - IND.3.SG
'He must take care, look after' (Lowe, 1984: 170) ¹²⁶ | | |

The description of *řukřau* in Lowe (*ibid*) along with the English translations of the example sentences suggest that *řukřau* encodes partial root force, more specifically that a source produces partial social ('deontic') or physical ('dynamic') force towards the actualization of the predicational content.

Though it seems clear from Lowe (1984: 170) that *řukřau* covers partial root force, it should be checked whether *řukřau* is restricted to this meaning, or whether *řukřau* may also be used to express other meanings, such as neutral root force ('possibility') or epistemic modal meanings. In some languages – e.g. Nez Perce (see Deal, 2011) – forms that are used to express partial root modal force can also be used to express neutral root modal force, i.e. 'ability' or 'permission'. It

¹²⁵ The North Slope Iñupiaq cognate is described in similar terms in MacLean (2014).

¹²⁶ The sentences and translations are from Lowe (1984). The segmentation and glossing are done by me based on Lowe (1984, 1985a) and MacLean (2014).

should therefore be confirmed that *řukřau* is indeed used for partial force only. It should also be determined exactly which root modal types – i.e. physical force (dynamic), social force (‘deontic’) and/or volitional or desirability force (‘bouletic’) – are covered by *řukřau*. Given Lowe’s (1984) example sentences, it is more likely that *řukřau* covers deontic and dynamic modality than bouletic modality. *Řukřau* will nevertheless be tested for all three types of root modal meaning.

In order to determine which root modal meanings *řukřau* can be used to express, an overview is attempted of the kinds of sources and states of affairs to which *řukřau* can relate the predicational content in its scope. This exploration will at first be slightly pre-theoretic, with the goal in mind of accurately describing what the predicational content in *řukřau*’s scope can be related to. The collection of these sources and states of affairs will then be used to identify the modal concepts covered by *řukřau*, and later on in Chapter 7 they form the foundation for a semantic and pragmatic account.

The present section will also check whether *řukřau* has root uses only. In some languages, we find forms used for expressing partial root modal force which may also be used to express partial *epistemic* modal force or even *hearsay evidential* meaning. In English, for instance, *must* can be used to express partial root modal force as well as partial epistemic modal force, and the modals *sollen* in German (see e.g. Öhlschläger, 1989: 233-234; Palmer, 2001: 42; Eide, 2005: 32) and *skulle* in Danish (see e.g. Boye, 2012a: 156) have both developed hearsay evidential meaning in addition to partial root modal meaning. This polyfunctionality between root modal meaning and hearsay evidential meaning is also found in Estonian and Finnish (see Kehayov and Leesik, 2009: 374).

The research questions pertaining to *řukřau* may be summed up as follows:

Research questions for *řukřau*:

Modal force (§5.3.1.2)

- Which degrees of modal force – i.e. neutral and/or partial – can *řukřau* be used to express?

Modal type and source (§5.3.1.3)

- Which root modal forces can *řukřau* be used to express?
- Can *řukřau* be used to express epistemic modal meaning?
- Can *řukřau* be used to express hearsay evidential meaning?

5.3.1.2 Modal force

Judging from the collected data, *řukřau* is an expression of partial force. This is evident from data like (5.68): here the consultants explain the sentence *Peter aulluqtukřauřuq* ‘Peter leave-*řukřau*’ as a description of an event that has to be actualized. The interviewer then asks about *aullallařuq* ‘he leave-*lla*’ in the same scenario, and the consultants’ explanations indicate that this sentence expresses weak force in contrast to the corresponding sentence with *řukřau* which expresses partial force:

(5.68)

J is discussing *Peter aulluqtukřauřuq* ‘Peter leave-*řukřau*’:

J: You commanding Peter..

N: .. to leave. He is getting too drunk, so he has to leave! Aullaqtukřauřuq Peter! Aniřukřauřuq!

[Interviewer asks about *aullallařuq*]

J: You could go. ‘Peter could go’.

N: It’s up to him if he wants to go or not. ‘He could go’. [...] You’re telling me ‘he can go’. But he doesn’t really have to go. It’s not -*tukřauřuq*.

Sentences under discussion:

Aullaqtukřauřuq Peter! Aniřukřauřuq!	Aullallařuq
aullaq - řukřau - tuq P. ani - řukřau - tuq	aullaq - lla - tuq
leave - řukřau - IND.3.SG [NAME] go.out - řukřau - IND.3.SG	leave - <i>can/may</i> - IND.3.SG
‘Peter must leave! He must get out!’	‘He may leave’

During the interviews, Uummarmiutun sentences with *řukřau* were never translated into English sentences expressing neutral force (e.g. with *can* or *may*), and communication intentions or English sentences containing neutral root meaning never elicited sentences with *řukřau*. Rather, Uummarmiutun sentences with *řukřau* were translated into English sentences with expressions like *supposed to*, *gotta* and *have to*, or their meanings were explained through scenarios containing preferences, obligations and needs. The collected data thereby confirm the hypothesis derived from Lowe (1984) that *řukřau* is restricted to partial modal force. The next section explores *řukřau*’s restrictions on modal type and source.

5.3.1.3 Modal type and source

Root meanings

It appears from the data set that sentences with *řukřau* tend to give rise to interpretations where there is a need for the predicational content to be actualized. This is illustrated in (5.69) where the consultant describes a situation where she could use *řukřau* in an utterance:

(5.69)

- N: I could say about you going to work. Una havayaq**tukřau**řuq, ‘Have to go to work’, this lady has to go to work.
S: Because she needs to make money?
N: Yeah
S: Or because the boss has said ..?
N: Yeah. Mhmm. Or you’re .. we’re busy talking to each other, and somebody comes along and I said: ‘This person’ – that come over – ‘can’t talk to you because she has to go to work’.
S: How do you say that? ‘She can’t talk to you right now, she has to go to work’ ?
N: Uqaqhatigillaitkin havagiaq**tukřau**řuq. You can’t talk to her because she has to go to work.

Sentences under discussion:

Una havayaq**tukřau**řuq
un - a havak - yaq - řukřau - řuq
DEM.EXT.VIS - PRON.DEM.SG.ABS work - assume.condition.of - *řukřau* - IND.3.SG
‘She has to go to work’

Uqaqhatigillaitkin havagiaq**tukřau**řuq
uqaqhatigi¹²⁷ - llait - kin havak - iaq - řukřau - tuq
talk.to - cannot - IND.2.SG.SUBJ.3.SG.OBJ work - go.and - *řukřau* - IND.3.SG
‘You can’t talk to her, she has to go to work’

In (5.69), it is external circumstances – probably the subject referent’s obligations – that necessitate the actualization of the state of affairs, rather than e.g. the speaker’s own internal desires or physical conditions. Datum (5.69) indicates that *řukřau* can be used to relate the predicational content to external circumstances. That *řukřau* covers this meaning is further confirmed in (5.70). Here the interviewer has asked if the word *Hiñiktukřauřutin* ‘you sleep-*řukřau*’ sounds good, and the consultant describes scenarios where the sentence could be uttered. Three scenarios are at play in (5.70); one where the subject referent is the imagined speaker’s misbehaving child, one where the

¹²⁷ The string *uqaqhatigi* arguably consists of *uqaq* plus *hatigi*. *Uqaq* means to talk, but I did not find an appropriate gloss for *hatigi*.

consultant draws on the context of the interview and builds a scenario where the subject referent is the interviewer, and one where the subject referent is an imagined misbehaving person:

(5.70)

- S: Can you say Hiñiktukfaufutin ?
 L: Yeah, if you're talking directly at that person.
 S: Is it then an order like 'You_have_to_go to sleep', or is it more like a recommendation, or ..
 L: Yeah. Yeah. Recommendation. You know – it's a better thing, you should go to sleep. I guess it depends on how you use your voice. Afauna! Hiñiktukfaufutin! Or you could say: Uvluriaq, hiñiktukfaufutin. You should go to sleep. You know – it depends on.. Maybe your son is being really awful and won't go to bed, Afauna! Goodness this person, Go to sleep! You should go to sleep, for your own good, or something. And then I could talk at a better tone to you, cause I know you would listen to me. Uvluriaq, hiñiktukfaufutin. Even that I stress it on faufutin, I'm not saying 'AFAUNA!!!'
 S: So what would you say, if you're like HIÑIKTUKFAFUTIN! Is it then 'otherwise I'll get mad' or [..]
 L: or I'm gonna phone the police or something. Go to sleep or else I'm gonna have to call the cops. Ququangniaritka ammaqt – you know – I'm gonna call the cops. .. Uvluriaq yarafutin. Hiñiktukfaufutin. You're so overtired right now, maybe you should go to bed. Go get some sleep. You know – at a different situation.

Sentences under discussion:

Hiñiktukfaufutin	Uvluriaq, yarafutin. Hiñiktukfaufutin
Hiñik - fukfau - tutin	U. yara - tutin. Hiñiktukfaufutin.
Sleep - fukfau - IND.2.SG	[NAME] tired - IND.2.SG Sleep - fukfau - IND.2.SG
'You should go to sleep.'	'Uvluriaq, you're so overtired right now, maybe you should go to bed.'
Ququangniaritka ammaqt	Afauna!
ququaq - niaq - itka	ammaqt
phone - FUT - IND.1.SG.SUBJ.3.PL.OBJ	police
'I'm gonna call the police!'	[EXCL]
	Oh my gosh!

From (5.70) it appears that *fukfau* can be used to describe the necessity of actualizing the state of affairs as related to social circumstances: in the scenario with the misbehaving son and the one with the imaginary person whom the speaker threatens with calling the police, there are social sanctions if the subject referent should fail to actualize the state of affairs (e.g. an angry parent and the police respectively). In the scenario where the speaker observes that the subject referent is tired, the modal source appears to be the speaker's assessment of the subject referent's needs. In this sense, the need for actualization seems to originate from a source internal to the subject referent in that it is the

subject referent's physical condition which constitutes the need for actualization of the state of affairs. This does not, however, mean that *řukřau* can be used to express meanings where a physical condition in and of itself produces the force towards the actualization of the state of affairs. Consider (5.71) and (5.72):

(5.71)

- S: So what if we say uhh tagiuqt**tukřauřuq**?
 J: Huna? ('what?')
 S: Does it make any sense?
 N: Tagiuqt**tukřauřuq**?
 S: Yeah?
 N: No
 [...]

 J: Tagiuqt**tukřauřuq**?
 S: Yeah?
 J: No. I can't understand you.
 S: What if we just say tagiuqtuq ?
 N: Yeah! To sneeze

Sentences under discussion:

* Tagiuqt tukřauřuq	Tagiuqtuq
Tagiuq - řukřau - tuq	Tagiuq - tuq
Sneeze - <i>řukřau</i> - IND.3.SG	Sneeze - IND.3.SG
*'He has to sneeze'	'He sneezes'

(5.72)

Datum from email correspondence:

S asked: "Is this word a good word? Tagiuqtuq**tukřauřunga**"

N corrected the sentence to tagiuqt**tukřauřunga** and explained: "You're commanding yourself to tagiuq sneeze. You're saying 'I must sneeze'. You're telling yourself you have tagiuqhaq."

Sentence under discussion:

Tagiuqt tukřauřunga
Tagiuq - řukřau - tunga
Sneeze - <i>řukřau</i> - IND.1.SG
'I have to sneeze (command)'

The questions in (5.71) and (5.72) were intended to check if *řukřau* could be used to relate the predicational content to a physical force – here the physical condition of the subject referent –

which in and of itself produces a force towards actualization. In (5.71), the sentence *tagiuqtuk̄faūfuq* ‘he/she/it sneeze-*fuk̄fau*’ is rejected, and in (5.72) the sentence *tagiuqtuk̄faūrunga* ‘I sneeze-*fuk̄fau*’ is explained as conveying a command rather than a description of a *physical* force-dynamic situation. Given that *tagiuqtuk̄faūrunga* ‘I sneeze-*fuk̄fau*’ gives rise to an interpretation containing a command to sneeze rather than a physical need, it appears that *fuk̄fau* does not relate the predicational content to physical sources which in and of themselves produce a force towards actualization. Rather, it seems that while *fuk̄fau* may indeed relate the predicational content to physical circumstances – as in one of the scenarios in (5.70) above – the interpretation will be social in that the physical condition is presented as something that someone else views as posing a need for actualization: in (5.70), where the speaker observes the subject referent’s physical condition as posing a need for actualization of ‘you sleep’, the modal source is indeed a physical state of affairs. It is nevertheless viewed as a basis for a recommendation, and hence the source of the force is social rather than physical. Datum (5.73) below is another example where *fuk̄fau* relates the predicational content to a state of affairs which describes the subject referent’s physical condition but nevertheless is viewed as a basis for a social force. I.e. the physical conditions constitute a *reason* for requiring or recommending that the state of affairs is brought about rather than a source that produces a force in and of itself:

(5.73)

The consultants are elaborating on *Nirīfuk̄faūfuq* ‘he eat-*fuk̄fau*’:

- J: Sick, because he’s sick [...] you know – he’s getting sick
[..]
- N: You have to let him eat. Somebody even if you go around ask people to help, – you know –he needs to eat, but he’s not listening to you. To eat, maybe if these other people come with something, maybe he’ll eat that.

Sentence under discussion:

Nirīfuk̄faūfuq
Niri - *fuk̄fau* - tuq
Eat - *fuk̄fau* - IND.3.SG
‘He needs to eat’

We have now seen data indicating that *fuk̄fau* is not appropriate for expressing a modal relation to a physical source unless it is used as a basis for a social force. That is, it appears that

řukřau can be used to express deontic modal meaning, but not dynamic modal meaning. Judging from the data presented below, *řukřau* is also not appropriate for relating the predicational content to the subject referent's desires, i.e. 'bouletic' modality or 'volitional' force. In (5.74), the intended desire interpretation is apparently not appropriately conveyed by means of a sentence with *řukřau*, which is rather interpreted as a command:

(5.74)

Datum from email correspondence:

S asks if *Maamaga piitchipialakiga, aiřukřauřunga* can be used to say 'I really miss my mom, I've gotta go home', or if *Maamaga piitchipialakiga, aihuktunga* is better.

N prefers to discuss the sentence *Piitchipialakkikpin, aiřukřauřunga* and elaborates as follows: "When you say that, you're commanding yourself to go home, you should say, want to go home *aihuktunga* or time for me to go home *ainaqhifunga*."

Sentences under discussion:

? *Maamaga piitchipiallakiga*

Maama - ga piichut - pialla - kiga
 Mother - 1.SG.POS.3.SG.OBJ miss - truly/totally - IND.1.SG.SUBJ.3.SG.OBJ

aiřukřauřunga

ai - řukřau - řunga
 home - *řukřau* - IND.1.SG

? 'I really miss my mom, I've gotta go home'

aihuktunga

ai - huk - tunga
 home - want - IND.1.SG
 'I want to go home.'

Piitchipialakkikpin, aiřukřauřunga

piitchi - pialak - kikpin ai - řukřau - řunga
 miss - truly/totally - IND.1.SG.SUBJ.2.SG.OBJ home - *řukřau* - IND.1.SG
 'I really miss you, I have to (command) go home'

aihuktunga

ai - huk - tunga
 home - want - IND.1.SG
 'I want to go home.'

ainaqhifunga

ai - naqhi - řunga
 home - time.to - IND.1.SG
 'It's time for me to go home.'

(5.75) below is another indication that *řukřau* is not suitable for expressing desire. In (5.75), the consultant explains the meaning of *Simon uqařtukřauřuq* 'Simon speak-*řukřau*' and *Simon*

uqakihifuq ‘Simon speak-*kiji*’¹²⁸ in relation to a scenario. Again, the sentence with *ruk̄fau* appears to relate the actualization of the predicational content to something social, namely the needs and decisions of a group of people rather than something internal to the subject referent:

(5.75)

Scenario: Simon knows a lot about whaling, and there’s a big whaling meeting tomorrow. Is one of these – if any – sentences appropriate: Simon *uqakihifuq* or Simon *uqaqtuk̄fau*

L: Okay if uhm .. if we’re gonna choose somebody to talk for us, then Simon *uqaqtuk̄fau*. He’s the one to speak. And then this Simon *uqakihifuq*, it’s just uhm, Simon will speak. You know – on his, not, not for .. just from himself. But us we want him to speak, so we say *Uqaqtuk̄fau*. He’s gonna speak on our behalf. [...] And us, we want him, cause we don’t know how to speak that well, or – you know – we want someone who could speak really well with much knowledge. So we choose Simon. *Uqaqtuk̄fau*.

Sentences under discussion:

Simon <i>uqakihifuq</i>	Simon <i>uqaqtuk̄fau</i>
S. uqaq - <i>kiji</i> - tuq	S. uqaq - <i>ruk̄fau</i> - tuq
[NAME] speak - FUT - IND.3.SG	[NAME] speak - <i>ruk̄fau</i> - IND.3.SG
‘Simon is going to speak’	‘Simon is going to/should speak’

Simon uqaqtuk̄fau ‘Simon speak-*ruk̄fau*’ is interpreted as conveying that it is preferable that Simon speaks because he knows the most about whaling. The actualization of the event denoted by the predication seems to be preferred by a group of people because of the subject referent’s skills seen in relation to their goals for the meeting. In this sense, the source produces a social force for the actualization of ‘Simon speak’.

Given that *ruk̄fau* is so closely associated with reference to a force producing a social force, it should come as no surprise that *ruk̄fau* can be used to talk about events as scheduled, since schedules usually involve some sort of social contract (see e.g. Brandt, 1999; Boye, 2001). In (5.76) below, the consultant is explaining the difference between *Piufaarniaqtuq* ‘he play-*niaq*’ and

¹²⁸ *Kiji* appears to be an expression of future meaning given the limited amount of data collected on *kiji* throughout the present study. It is not possible based on the available data to identify the exact meaning of *kiji* and how this is different from *niaq*, which is also an expression of future meaning (see Lowe, 1984: 146). One of the speakers consulted for the present study expressed the view that *kiji* is more used in the ‘Delta Language’, i.e. the Uummarmiutun dialect, whereas *niaq* is more used in Alaska and the Eastern Arctic. *Kiji* does not figure in the Uummarmiutun dictionary (Lowe, 1984).

Piuraqtuk̄raūruq ‘he play-*ruk̄rau*’, and it appears that while the sentence with *niaq* only locates the event in the future, the sentence with *ruk̄rau* also evokes the idea of a schedule:

(5.76)

- L: Piufaaqtuk̄raūruq ... He is going to play. -tuk̄raūruq, it’s like, Is going to. And if you say Piufaarniaqtuq .. I think Piufaarniaqtuq is .. you know – like ‘he’s going to play’. And when you say Piufaaqtuk̄raūruq, ‘he’s supposed to play’
- S: Like if somebody ordered him to play because this is good for him or.. or because he needs it or..
- L: He’s supposed to play. Like if they are on to play hockey. Simon piufaaqtuk̄raūruq. Simon is supposed to play. You know – like a scheduled time. Something like, it’s like that. But when you just say Simon piufaarniaqtuq, we don’t know when, we just know he’s gonna play. But that Piufaaqtuk̄raūruq, it’s almost it’s like it’s uhm, at a scheduled time or .. it has little bit more, like uhm, time or whatever. [...] It changes a little bit. It could mean the same thing if you don’t really think about it. But if you hear that -tuk̄raūruq, it means he’s gonna play at a certain time or a scheduled time. But that -niaqtuq, it’s just he’s gonna play. Regardless.

Sentences under discussion:

<p>Simon piufaaqtuk̄raūruq S. piufaaq - ruk̄rau - tuq [NAME] play - <i>ruk̄rau</i> - IND.3.SG ‘Simon is going/is supposed to play’</p>	<p>Simon piufaarniaqtuq S. piufaaq - niaq - tuq [NAME] play - FUT - IND.3.SG ‘Simon is going to play’</p>
--	--

As it appears, *Piufaarniaqtuq* ‘he play-*niaq*’ and *Piuraqtuk̄raūruq* ‘he play-*ruk̄rau*’ may both be translated into English sentences containing *going to*. However, the sentence with *ruk̄rau* also receives a translation containing *supposed to*, and the association of *Piuraqtuk̄raūruq* ‘he play-*ruk̄rau*’ with scheduled time indicates that *ruk̄rau* makes a reference to an external factor pushing for the actualization of the event. It is interesting to note that like *ruk̄rau*, the Danish modal *skulle* can also be used with command interpretations as well as with a less authoritative but nonetheless socially motivated plan-interpretation (see e.g. Boye, 2001).

Epistemic modal meaning

The collected data confirms that *ruk̄rau* does not cover epistemic modal meaning. This is evident from data like (5.77), (7.78) and (5.79) below. In (5.77), the sentence *Nakuuruk̄raūruq* ‘be well-*ruk̄rau*’ seems to be semantically odd given the consultant’s explanation; it is not possible to boss somebody around and tell them to be doing well:

(5.77)

- S: I was wondering about a word like, can you say *Nakuuřukřauřuq* ? Can you make a sentence with that? Or is it a weird word?
N: ... Wait ... No again you are telling this person has to be good.
S: Has to be doing good or feeling good?
N: Doing, doing good. Where could we boss somebody around haha!

Sentence under discussion:

- **Nakuuřukřauřuq*
naku - u - řukřau - tuq
pleasure - be - řukřau - IND.3.SG
*‘She has to be doing good.’

The rejection of *Nakuuřukřauřuq* ‘be well-řukřau’ suggests that sentences with řukřau do not express epistemic modal meaning. If epistemic modal interpretations had been easily available for sentences with řukřau, *Nakuuřukřauřuq* ‘be well-řukřau’ would arguably have been accepted and received an interpretation like ‘she is probably doing well’.¹²⁹ Moreover, in (5.78) below *aulluqtukřauřuq* ‘he leave-řukřau’ is rejected in a scenario where the communication intention includes epistemic modal meaning:

(5.78)

Scenario: If we imagine that we are at a party, and we are wondering, is Peter, has Peter left? And then we go to the entrance, and I see that his shoes are missing. And then I’m thinking ‘Oh that’s probably, this means that he has left’. Can I say *Aulluqtukřauřuq* ?

- N&J: Has to leave
S: I can’t say it in the context where I see his shoes and think that, he probably .. he must have left .. Then I don’t say *Aulluqtukřauřuq* ?
N&J: No
J: Because that’s command.
N: You know – you’re ..
J: You’re commanding Peter..
N: .. to leave. He is getting too drunk, so he has to leave! *Aulluqtukřauřuq* Peter! *Aniřukřauruq*!

¹²⁹ For comparison, the verb stem *nakuu-* ‘be well’ may be combined with the epistemic modal postbase *hungnaq* ‘probably’. In the following quote, N elaborates on the meaning of the word *nakuuhungnaqtuq*: “*Sue nakuuhungnaqtuq. Because you think she’s, she’s doing okay – you know – she’s doing okay, so you say uhm ‘Maybe she’s okay’.*”

Sentences under discussion:

Aullaq	tukřauřuq	Peter!	Ani	řukřauřuq!		
aullaq	- řukřau	- tuq	P.	ani	- řukřau	- tuq
leave	- řukřau	- IND.3.SG	[NAME]	go.out	- řukřau	- IND.3.SG
'Peter must leave! He must get out!'						

Consider also (5.79) where the consultant offers a different scenario for the sentence with *řukřau* rather than the scenario described by the interviewer where the targeted communication intention contains epistemic meaning:

(5.79)

Scenario: Peter has been sick for a while and he's been sleeping most of the time. Now I see that his hands start moving a little bit, and I see his eyelids moving a little. Can I say one of these sentences here (interviewer shows sentences *ititukřauřuq*, *itifumaaqtuq*, *itikihiřuq*) to his wife or somebody else who's in the room? Or would something else be better?

- L: When you say *Ititukřauřuq*, that means you're telling somebody that they should wake up. Maybe uhm, Signe *ititukřauřuq* 8 o'clock-mi. Signe should wake up at this time. [...] Yeah, so that *Ititukřauřuq*. He, he's gotta be up at 7:30, he's gonna go to work at 8.
- S: Oookay, I see, so it can't be used in this (points at description of scenario in interview guide)?
- L: No.
- S: I see
- L: Okay, cause we're planning it. Or planning for that awakening, why it's happening at 7:30 it's because of this .. So this is not being planned it's just happening (points at description of scenario) after .. after.. So that (=ititukřauřuq) can't connect to that (points at description of scenario).

Sentences under discussion:

itifumaaqtuq	itikihiřuq				
itiq	- yumaaq	- tuq	itiq	- kihi	- řuq
wake.up	- intend.to	- IND.3.SG	wake.up	- FUT	- IND.3.SG
'He intends to wake up'			'He's going to wake up.'		
Signe	ititukřauřuq	8 o'clock	- mi		
S.	itiq	- řukřau	- tuq	8 o'clock	- mi
[NAME]	wake.up	- řukřau	- IND.3.SG	8 o'clock	- LOC
'Signe should wake up at 8 o'clock'					

In the scenario described by the interviewer, the speaker observes a sign upon which she bases the conjecture that the predicational content 'he wake up' will take place in the future. This scenario is apparently not endorsed as a suitable context for uttering *ititukřauřuq* 'he wake up-řukřau'.

The sentence is rather matched with a scenario where there is a reason for the subject referent to wake up at a certain time, e.g. in order to have enough time to get ready for work. That is, the sentence with *řukřau* is matched with a context where the circumstances – i.e. the subject referent’s job – have an impact on the future actualization of the predicational content rather than a scenario where the speaker observes a sign that the predicational content might be about to take place.

As expected based on the description in Lowe (1984: 170), the data show that *řukřau* is not a vehicle for expressing epistemic modal meaning.

Evidential meaning

As we saw in the previous section, *řukřau* is not appropriate for expressing epistemic modal meaning. It turns out, however, that *řukřau* – at least according to some consultants – can be used to express another epistemic meaning, namely hearsay evidentiality.¹³⁰ In (5.80), the interviewer has asked the consultant if *hialuktukřauřuq* ‘it rain-*řukřau*’ is appropriate in a context where the speaker observes the black skies. This is not the case (as expected given that *řukřau* cannot express epistemic modal meaning), but the consultant does accept the word *hialuktukřauřuq* ‘it rain-*řukřau*’ and provides another context where it could be used:

(5.80)

J: Hialuktukřauřuq is ... uhh ... You, you’re seeing the .. somebody you heard the news and .. that gonna rain. But, you’re saying .. Hialuktukřauřuq because you heard this, the news. [...] But me I could tell you, Hialukihifuq, because I’ve seen the clouds.

S: And then I can tell somebody else Hialuktukřauřuq ?

J: ... uhhh .. You heard it from me, yeah.

Sentences under discussion:

Hila hialuktukřauřuq
 hila hialuk - řukřau - tuq
 weather rain - řukřau - IND.3.SG
 ‘It’s gonna rain’

In the scenario in (5.80) there is hardly any reference to a modal source that may cause or favor the actualization of the event. Rather, the speaker in the scenario hears a report from another person

¹³⁰ See Boye (2012a) and Chapter 3, §3.4.2, in the present thesis for a disentanglement of the two sub-categories of epistemic meaning ‘evidentiality’ and ‘epistemic modality’.

that it is going to rain and then passes on this information to a third party by saying *hialuktuk̄faūf̄uq* ‘it rain-*fuk̄fau*’. A sentence with *kihi* – *hialukihif̄uq* ‘it is going to rain’¹³¹ – is apparently appropriate for a speaker who has observed the black skies, while the speaker who passes on this information to a third party can do so by saying *hialuktuk̄faūf̄uq* ‘it rain-*fuk̄fau*’. It thus appears that Ummarmiutun *fuk̄fau* can be used to convey hearsay evidential meaning, and when doing so there is no restriction on a certain force; given J’s explanation in (5.80), the speaker merely passes on information without expressing decreased certainty. Note also that J says that the interviewer can say *hialuktuk̄faūf̄uq* ‘it rain-*fuk̄fau*’ in a context where “*you heard it from me*”. J is a knowledgeable Elder with a lifetime of experience of hunting and living on the land. There is no reason to assume that she would believe that others should pass on her observations regarding the weather with decreased certainty.

It should be noted that a) root interpretations are also available for *hialuktuk̄faūf̄uq* ‘it rain-*fuk̄fau*’ as seen in (5.81), and b) not all consultants find the sentence with *hialuktuk̄faūf̄uq* ‘it rain-*fuk̄fau*’ acceptable as seen in (5.82) and (5.83):

(5.81)

- S: So, what if I say *hialuktuk̄faūf̄uq* ? Or is that weird?
 J: *Hialuktuk̄faūf̄uq*, that’s a *naungniangitchut*, *hialuktuq* hahah
 S: It doesn’t work, or?
 J: No it’s uhm, a good one alright.
 S: Yeah? What does it mean?
 J: Wait. Gotta rain. Because that .. berries uhh.. getting dry. Gotta rain. Just like a garden. You put water in the garden and. Same, *hialuktuk̄faūf̄uq*

Sentences under discussion:

<i>Hialuktuk̄faūf̄uq</i>	<i>Naungniangitchut</i>
<i>hialuk</i> - <i>fuk̄fau</i> - <i>tuq</i>	<i>nau</i> - <i>t</i> - <i>niaq</i> - <i>nngit</i> - <i>chut</i>
rain - <i>fuk̄fau</i> - IND.3.SG	grow - accomplish - FUT - NEG - IND.3.PL
‘It gotta rain’	‘They are not going to grow.’

(5.82)

The interviewer asked the consultant to make a sentence with *Hialuktuk̄faūf̄uq* ‘it rain-*fuk̄fau*’:

- N: I can’t. I can’t uhm .. I can’t let the weather rain myself. *Havairaktuk̄f̄.* it’s not like ‘You going to work’. ‘You have to go to work!’ ‘*Una havayaktuk̄faūf̄uq!*’ I can’t say I have to let it rain.

¹³¹ It should be noted that it is not entirely clear whether the expression *hi* or *kihi* is involved in this word. Nevertheless, both postbases seems to have future meaning similar to English ‘begin to’ or ‘will when the time is right’ (see North Slope Iñupiaq cognates in MacLean’s (2014) dictionary).

- S: I see.
 N: I can't say to the rain, honestly this rain has to rain because I said so. I can't. I'm not the boss of the hahah!

Sentence under discussion:

(Una) hialuktuk \hat{f} au \hat{f} uq
 un - na hialuk - \hat{f} uk \hat{f} au - tuq
 DEM.EXT.VIS - PRON.DEM.SG.ABS rain - \hat{f} uk \hat{f} au - IND.3.SG
 * '(It) rain- \hat{f} uk \hat{f} au'

(5.83)

- S: I was curious about this sentence here, if I say Hialuktuk \hat{f} au \hat{f} uq uvlupak. Can I say that if I hear on the weather forecast ..
 N: No.
 S: No?
 N: No. You're, you're making it rain, you. You're the boss of the rain. Hialuktuk \hat{f} au \hat{f} uq. .. uh .. now it's up to you if you want it to rain .. or not.

Sentence under discussion:

Hialuktuk \hat{f} au \hat{f} uq uvlupak
 hialuk - \hat{f} uk \hat{f} au - tuq uvlupak
 rain - \hat{f} uk \hat{f} au - IND.3.SG today
 * 'It's gonna rain (heard on the weather forecast)'

Given the rejection of *hialuktuk \hat{f} au \hat{f} uq* 'it rain- \hat{f} uk \hat{f} au' in (5.82) and especially in (5.83), it seems that while the evidential use of \hat{f} uk \hat{f} au is available (as in (5.80)), it is not part of the conventionally encoded meaning of \hat{f} uk \hat{f} au, though it may be undergoing a change.

It is interesting to note that the Siglitun cognate *yuksau* may have a secondhand evidential use in addition to its more common partial social force use. (5.84) below is a quote from a consultation with a speaker of Siglitun, who explains *silaluktuksauyuaq* 'it rain-yuksau' as "[..] somebody really knows it's gonna rain":

(5.84) Siglitun

H is elaborating on *silaluktuksauyuaq* 'it rain-yuksau':

- H: But – you know – nowadays when you listen to the weather forecast? On the radio and TV. They always saying yeah it's supposed to rain over here it's supposed to rain over there, yeah, and that's what they would use in our language. Silaluktuksauyuaq Inuvingmi Tuktoyaktuamilu Ulusaktuamilu. It's gonna rain in all those three places. That's what I'm saying, like I know it for

sure silaluk**tuksau**yut, it's gonna rain over there. Cause I'm saying that is like uhm, somebody really knows it's gonna rain haha! But, if I said this uhm..

S: The silaluk**tuksau**yuaq?

H: No, the other one .. what it said again?

S: Silalungniarungnaqtuaq?

H: Okay. Silalungniarungnaqtuaq [...] It's PROBABLY gonna rain in those three places. Whereas this one (=silaluk**tuksau**yuaq), is saying, it's gonna rain.

Sentences under discussion:

Sialuk**tuksau**yuaq¹³²

sialuk - yuksau - yuaq

rain - *yuksau* - IND.3.SG

'It's supposed to rain'

Sialuk**tuksau**yuaq Inuvingmi Tuktoyaktuamilu Ulusaqtuamilu

sialuk - yuksau - yuaq Inuvik - mi Tuktoyaktuq - ami - lu Ulusaqtuq - ami - lu

rain - *yuksau* - IND.3.SG Inuvik - LOC Tuktoyaktuq - *ami*¹³³ - LOC Ulusaqtuq - *ami* - LOC

'It's gonna rain in Inuvik and in Tuktoyaktuk and in Ulusaqtuq'

Sialungniarungnaqtuaq

sialuk - niaq - yungnaq - tuaq

rain - FUT - probably - IND.3.SG

'It's probably gonna rain'

Contrary to Uummarmiutun *ruk̄rau*, Siglitun *yuksau* seems to also be appropriate for conveying epistemic modal meaning without reference to a secondary source (i.e. without aspects of hearsay evidentiality). In (5.85), the speaker observes a sign that the state of affairs might be the case in the future. Datum (5.85) moreover shows that Siglitun *yuksau* may be used to express *neutral* epistemic force given the consultant's use of the neutral epistemic force modal *might* in her English translation:

(5.85) Siglitun

Elaborating on the sentence *Tina sanngiyuksautuq, aglaan sannginngittuq*:

H: So you can make that statement *Tina sanngiyuksautuq, aglaan sannginngittuq*. Right now, right now she is not. She might have been just two years old now. Maybe in uh years up ahead she might be strong. You could show a picture of a child and make that statement.

¹³² The verb endings *-yuaq* and *-yuaq* are used interchangeably in Siglitun (see Lowe, 1985b).

¹³³ I am not sure how to appropriately gloss Siglitun *ami*, and hence it is left un glossed.

Sentences under discussion:

Tina sanngiyuksauyuaq, aglaan sannginngittuq
T. sanngi - yuksau - yuq aglaan sanngi - nngit - tuq
[NAME] strong - yuksau - IND.3.SG but strong - NEG - IND.3.SG
'Tina might be strong (later), but (now) she is not strong.'

Interestingly, it appears that *yuksau* may also be associated with interpretations where the speaker has certain knowledge, as in (5.86).

(5.86) Siglitun

S: Is it, what would be the difference between if somebody said utiqtuksauyut and tuktut utirniaqtut?
H: Cause you just know. Utirniaqtut, they're gonna come back. But you, you're making a statement, utiqtuksauyut, you really definitely know that they're gonna come back.

Sentences under discussion:

Tuktut utirniaqtut	Tuktut utiqtuksauyut
tuktu - t utiq - niaq - tut	tuktu - t utiq - yuksau - yut
caribou - PL come.back - FUT - IND.3.PL	caribou - PL come.back - yuksau - IND.3.PL
'The caribou are gonna come back'	'(Definitely) the caribou are gonna come back'

It could be that interpretations containing epistemic certainty are available for utterances with *yuksau* because evidential uses of *yuksau* are unmarked for epistemic strength and merely presents the event as epistemically related to hearsay evidence. Depending on the context, a reference to an evidential source may be used to weaken as well as strengthen the epistemic status of the proposition (see §5.2.3, Chapter 8; Boye, 2012a), and in (5.86) the reference to hearsay evidence apparently strengthens the epistemic status.

Siglitun *yuksau* thus appears to have developed hearsay evidential uses (see (5.85)) like Uummarmiutun *řukřau*. It should be noted, however, that Siglitun *yuksau* (like Uummarmiutun *řukřau* (see (5.77), (5.78) and (5.79)) is not appropriate for non-future epistemic modal statements; *Anguniaqtuksauyuq* 'she hunting-yuksau' was rejected in the following scenario: "If we say that this person Peter he asks me on the phone, where Betty is. And I can see her house, from my house, and I can see that all her hunting gear and her truck is missing". Also the North Slope Iñupiaq cognate *tuksrau* "to be the one who should or must V" (MacLean, 2014: 1049) does not seem to permit non-future epistemic interpretations (if it permits epistemic interpretations at all) given (5.87):

(5.87) North Slope Iñupiaq

Nígiruksrauruq
nīgi-tuksrau-tuq
eat - tuksrau - IND.3.SG
'He has to eat / He must eat'

Dispreferred in a scenario where the speaker can hear the subject referent chew.

(Notes from interviews with a speaker of North Slope Iñupiaq in Utqiagvik, Alaska, 2011)

The Utkuhikšalingmiutut cognate *řukšau* “*should X, I hope/wish that X/probably X*” (Briggs et al. 2015: 512-3), however, does seem to permit non-future epistemic interpretations given (5.88):

(5.88) Utkuhikšalingmiutut

Ikajuqtukšauřuq
ikajuq - řukšau - řuq
help - should - PART.3.SG
'I think she is helping'

(Briggs et al. 2015: 513)

The ‘hope/wish’ interpretation available for Utkuhikšalingmiutut *řukšau* (Briggs et al. 2015: 512-3) does not appear to be available for Uummarmiutun *řukřau*:

(5.89)

- S: uhm .. what about if we say that uhm, I have called and booked a carpenter to come and help me out in the house. Or like, one of those handymen
N: Yeah, m-hm.
S: And it’s quite heavy, the work that needs to be done, and I’m sitting waiting for him and I’m thinking Ooooh I sure hope he’s strong. Can I then say Hanngiřukřauřuq ?
N: Heh?
S: And I’m like hoping and wishing that he’s strong ? No?
N: (laughs)
S: Hahah oh, now I wonder what I said hahah!
N: You said he has to be strong. [...] In order to come and work for me he has to be strong hahah!
S: Hahah otherwise I send him back haha
N: Or you kick him out hahah

Sentence under discussion:

Hanngiřukřauřuq
hanngi - řukřau - tuq
strong - řukřau - IND.3.SG
'He has to be strong.'

To sum up the observations made for *řukřau* and epistemic meaning so far, it turns out that *řukřau* is not appropriate for epistemic modal meaning but may be used with evidential meaning according to some but not all speakers. The remainder of the section presents morphosyntactic evidence that supports the hypothesis that epistemic meaning – including evidential meaning – is not part of the meaning encoded by *řukřau*, and that *řukřau* is appropriately analyzed as lexically restricted to root modal meaning.

It appears that *řukřau* and the epistemic modal *hungnaq* ‘probably’ occupy different slots in the verbal word when they combine with the negation postbase *nngit*. Consider the pattern in (5.90):

(5.90)

a. Accepted

řukřau + *nngit* Utiq**tukřau**nngitchuq
 utiq - **řukřau** - **nngit** - řuq
 come.back - *řukřau* - NEG - IND.3.SG
 ‘You don’t have to give it back’
 Lit.: ‘It does not have to return.’

b. Rejected

nngit + *řukřau* * Utinngittuk**řau**řuq
 utiq - **nngit** - **řukřau** - řuq
 come.back - NEG - *řukřau* - IND.3.SG

c. Accepted

nngit + *hungnaq* Aningitch**hungnaq**tuq
 ani - **nngit** - **hungnaq** - tuq
 leave - NEG - maybe - IND.3.SG
 ‘Maybe he didn’t leave.’

d. Rejected

hungnaq + *nngit* * Anihungna**nngit**chuq
 ani - **hungnaq** - **nngit** - tuq
 leave - maybe - NEG - IND.3.SG

Recall from Chapter 2, §2.4.1, that postbases in Inuktitut are restricted to certain slots depending on the type of meaning they express, and that the place in relation to other postbases in the word can be used to disambiguate ambiguous postbases (Fortescue, 1980; Trondhjem, 2008, 2009). As Fortescue (1980: 261, 272) points out, epistemic modal affixes belong in the slot closer to the verb ending than expressions of root modal meaning. The findings in (5.90) above show that when combining with negation, *řukřau* needs to occur closer to the *stem* than the negation postbase *nngit*. *Hungnaq*, on the other hand, needs to occur closer to the verb *ending* when combining with *nngit*. If epistemic – including evidential – meaning had been conventionally associated with Uummarmiutun *řukřau*, we would have expected that *řukřau* could occur closer to the verb ending than *nngit* and simply receive an epistemic interpretation. This relational order of *nngit* and *řukřau* is however not accepted at all judging from (5.90b).

Another indication that epistemic meaning is not part of the encoded meaning of *řukřau* is the restriction on the relational order of *řukřau* and *hungnaq* ‘probably’. When these two postbases co-occur in a word, *řukřau* occupies the slot closest to the stem:

(5.91)

a. Rejected

<i>hungnaq</i> + <i>řukřau</i>	* Anihungnaqtukřauřuq
	ani - hungnaq - řukřau - řuq
	leave - may/can - <i>řukřau</i> - IND.3.SG

b. Accepted

<i>řukřau</i> + <i>hungnaq</i>	Havaktukřauhungnaqtuq
	havak - řukřau - hungnaq - řuq
	work - <i>řukřau</i> - maybe - IND.3.SG
	(you fixed something and) ‘Maybe it’s gonna work’

Last but not least, *řukřau* cannot occur together with the root modal postbase *yumiřaq* ‘may, can’, as shown in (5.92); if epistemic meaning had been part of the conventionalized meaning of *řukřau*, *řukřau* would probably have contributed with epistemic meaning in (5.92). The epistemic modal *hungnaq* ‘probably’, on the other hand, may indeed co-occur with *yumiřaq* ‘may, can’ as in (5.93):

(5.92)

a. Rejected

yumiñaq + *řukřau* * Aniyumiñaq**tukřau**řuq
ani - **yumiñaq** - **řukřau** - řuq
leave - may/can - *řukřau* - IND.3.SG

b. Rejected

řukřau + *yumiñaq* * Ani**řukřau**yumiñaqtuq
ani - **řukřau** - **yumiñaq** - řuq
leave - *řukřau* - may/can - IND.3.SG

(5.93)

Accepted

yumiñaq + *hungnaq* Aniyumiñar**ungnaq**tuq
ani - **yumiñaq** - **hungnaq** - tuq
leave - may/can - maybe - IND.3.SG
'Maybe he could go out'

As can be seen from the restrictions on which suffixes *řukřau* can combine with as well as the restrictions on relational order when *řukřau* combines with negation or the epistemic modal *hungnaq* 'probably', *řukřau* does not behave as a postbase with conventionally encoded epistemic meaning. The morphosyntactic findings regarding *řukřau* therefore support the conclusion that the encoded meaning of *řukřau* does not cover epistemic modal meaning. As we saw in (5.80) though, *řukřau* may be used to express evidential meaning, which is a type of epistemic meaning (see Chapter 3, §3.4.2; Boye, 2012a). However, not all consultants appeared to endorse evidential interpretations of sentences with *řukřau*, which leads to the hypothesis that *řukřau* could be on the path of developing evidential meaning, while this is not part of its encoded meaning in present day Ummarmiutun. This hypothesis, that evidentiality is not encoded by *řukřau*, is compatible with the morphosyntactic restrictions on *řukřau* presented in the present section; if evidentiality had been part of the meaning encoded by *řukřau*, we would have expected *řukřau* to pattern morphosyntactically like an epistemic expression, and that (5.91a) would have been accepted and given an interpretation like 'reportedly, he must/might have left'. The findings in the present

section rather show that the evidential uses of *řukřau* are not conventionalized to the extent that it affects the morphosyntactic restrictions.

5.3.1.4 Conclusions: Meanings covered by *řukřau*

The collected data confirm the hypothesis derived from Lowe (1984) that Ummarmiutun *řukřau* is lexically restricted to partial root modal force. Moreover specifically, the data set shows that *řukřau* is restricted to social force – i.e. deontic modal meaning – only. In other words, it turns out that *řukřau* is not appropriate for expressing dynamic and bouletic modal meanings. This hypothesis is based on the data where sentences with *řukřau* are dissociated from interpretations where physical circumstances in and of themselves or the subject referent's desires produce the modal force (see data (5.71), (5.72), (5.73) and (5.74)). Since some modals (i.e. in Germanic languages and other languages of Europe) are used for root as well as epistemic meanings, it was tested whether *řukřau* has epistemic uses in addition to its root uses. The following findings show that epistemic modal interpretations are not available for *řukřau*: 1) rather than receiving an epistemic modal interpretation, *nakuuřukřauřuq* 'she doing well-*řukřau*' is rejected because we can't command that somebody is well (see (5.77)), 2) *aullaqtukřauřuq* 'he leave-*řukřau*' is rejected as a vehicle for conveying a communication intention with epistemic meaning (in (5.78)), and 3) *ititukřauřuq* 'he wake up-*řukřau*' is matched with a scenario where the circumstances make the actualization of the predicational content preferable rather than a scenario where the speaker observes a sign that the predicational content might take place (see (5.79)).

It turned out that *řukřau* may be used to express hearsay evidential meaning. This use of *řukřau* is however not to be considered part of *řukřau*'s conventional meaning, since a) other consultants rejected such interpretation, and b) *řukřau* behaves like a root modal in combination with negation and in combination with other modals. One consultant's association of *řukřau* with evidential meaning along with the ability of the Siglitun and Utkuhikřalingmiutut cognates *yuksau* and *řukřau* to express epistemic modal meaning could suggest that Ummarmiutun *řukřau* is on its way towards developing some sort of epistemic uses, more specifically hearsay evidentiality. The finding that *řukřau* may be used to express evidential meaning was not predicted by the entry in Lowe (1984). Based on observations of similar modals in other languages – e.g. German and

Danish – however, the finding is not surprising: like *řukřau*, also *sollen* in German and *skulle* in Danish are used for partial social force as well as hearsay evidentiality.

The table below sums up the answers to the research questions put forward at the beginning of the section:

	Epistemic	Root		Evidentiality
Neutral force (‘modal possibility’)	NO	NO		Accepted by some but not all speakers
Partial force (‘modal necessity’)	NO	Social / Deontic	YES	
		Physical / Dynamic	NO	
		Desirability / Bouletic	NO	

Since it has turned out that *řukřau* is restricted to social force, I shall use the gloss ‘should’ for *řukřau* in the remaining chapters of the thesis. English *must* and *has to*, which figure in Lowe’s (1984) dictionary entry are not restricted to social force. English *should*, on the other hand, is associated with notions like norms (Papafragou, 2000) and obligations (Coates, 1983) and hence appears to be a more suitable gloss for *řukřau*. It should of course be kept in mind that the use of a given English word in a gloss does not mean that the English word corresponds precisely to the given Uummarmiutun expression. It is nevertheless desirable that a gloss is as precise as possible.

5.3.2 hungnaq

5.3.2.1 Research questions

The postbase rendered here as *hungnaq* corresponds to the postbase listed as *huknaq* in the Uummarmiutun dictionary (Lowe, 1984: 105). The speakers of Uummarmiutun consulted for the present study favoured the orthographic representation *hungnaq* because it is more in accordance with the pronunciation.¹³⁴ According to the dictionary (Lowe, 1984: 105), *hungnaq* means

¹³⁴ Interestingly, the North Slope Iñupiaq cognate is represented orthographically as *sugnaq* ‘probably is V-ing’ (MacLean, 2014: 654) and the Siglitun cognate is represented as *yungnaq* ‘to have probably X-ed; must have X-ed’ (Lowe, 2001: 371). Recall from Chapter 2 that Uummarmiutun is closer affiliated with North Slope Iñupiaq as both are dialects of Alaskan Iñupiatun, while Uummarmiutun and Siglitun are spoken in the communities in the Inuvialuit Settlement Region in Canada. It could very well be that the pronunciation of Uummarmiutun *hungnaq* was closer to North Slope Iñupiaq *sugnaq* in the mid 80’s when Lowe consulted speakers of Uummarmiutun for the dictionary, and

‘probably’, and all Uummarmiutun example sentences figuring in the entry have English translations containing the word *probably*, e.g. as in (5.94) below. *Hungnaq* merges with the final consonant of the stem as in (5.94a) and attaches directly to vowel final stems as in (5.94b). The final consonant of *hungnaq* merges with some inflections, e.g. the transitive declarative as in (5.94b) (see Lowe, 1984):

(5.94)

- | | | | |
|----|--|----|---|
| a. | aullaruknaqtuq
aullaq - huknaq - tuq
leave - <i>hungnaq</i> - IND.3.SG
‘he probably left’ | b. | tunihuknaraa
tuni - huknaq - raa
sell - <i>hungnaq</i> - IND.3.SG.SUBJ.3.SG.OBJ
‘he probably sold it’ (Lowe, 1984: 105) ¹³⁵ |
|----|--|----|---|

Given Lowe’s (1984) description, a reasonable hypothesis is that *hungnaq*, like English *probably*, expresses epistemic modality. Besides confirming that *hungnaq* indeed covers epistemic modality, the dataset will be used to shed light on various other questions regarding *hungnaq*’s semantic parameters.

First, we need to check which forces *hungnaq* can be used to express. In some languages – e.g. Gitksan (Tsimshianic) (Matthewson, 2013) – epistemic modals which do not allow root interpretations may cover neutral as well as partial modal force. It is therefore possible – especially since *hungnaq* seems to be epistemic only, judging from Lowe’s (1984) entry – that *hungnaq* may be used to express neutral as well as partial epistemic modal force. Moreover, it must be checked whether the meaning of *hungnaq* also covers full epistemic force, i.e. full certainty. If *hungnaq* may be used to express all degrees of epistemic force (i.e. neutral, partial and full), this has implications for the categorization of *hungnaq* as a modal: if it is found that *hungnaq* may be used to express any degree of force, *hungnaq* will not be a modal on the definition of modality outlined in Chapter 3, because in that case, *hungnaq* would not restrict the force parameter. It is also necessary to present and analyze data with the intention to determine *hungnaq*’s restrictions on modal type. Some modals – e.g. Indo-European modals (recall Chapter 3) – may be used to express

that this led to the decision to render the postbase as *huknaq*. In that case, it seems that the present day pronunciation of Uummarmiutun *hungnaq* may have changed from *huknaq* and become closer to the pronunciation of the Siglitun cognate *yungnaq*.

¹³⁵ The sentences and translations are from Lowe (1984). The segmentation and glossing are done by me based on Lowe (1984, 1985a) and MacLean (2014).

root modality as well as epistemic modality, and hence the need to check whether Uummarmiutun *hungnaq* is in fact restricted to epistemic modality only. *Hungnaq* should also be checked for evidential restrictions, as some epistemic modals express evidential meaning in addition to their modal meaning (see Chapter 3, §3.4.2; Boye, 2012a). Due to the contested relationship between evidentiality and epistemic modality in the linguistics literature – and especially von Fintel and Gillies' (2010) claim that all epistemic modals are evidential (see §3.4.2.1) – the present section contains a critical discussion of the data on *hungnaq* which aims at determining whether evidential restrictions play a role in *hungnaq*'s semantics.

The research questions guiding the data collection and analyses are listed here:

Research questions for *hungnaq*:

Modal force (§5.3.2.2)

- Which degrees of force – i.e. neutral and/or partial – can *hungnaq* be used to express?
- Can *hungnaq* also be used to express (the non-modal) full epistemic force?

Modal type and source (§5.3.2.3)

- Is *hungnaq* epistemic only, or *may-hungnaq* also be used to express root modality?
- Does *hungnaq* have evidential restrictions?

5.3.2.2 Modal force

The data presented in this section were collected to determine whether *hungnaq* is lexically restricted to a specific degree of modal force. We shall look at data pertaining to *hungnaq*'s ability to express neutral and partial epistemic force meanings in the first sub-section. The question whether *hungnaq* can also express full epistemic force – i.e. full certainty which is not a modal concept on the present definition – is left for the second sub-section.

Neutral and partial modal force

In (5.95) below, the consultant translates the following mini-dialogue:

A: Will she move from Aklavik?

B: She likes Aklavik. Maybe she will stay.

In this mini dialogue, speaker B infers that there is a possibility that the subject referent will stay, and he bases this conjecture on the knowledge that she likes Aklavik. The consultant offers a sentence with *hungnaq* as a vehicle for conveying ‘maybe she will stay’ in this context:

(5.95)

S: And then this other person says, She likes Aklavik. Maybe she will stay.

J: Aklavik nakuarigaa [...] Nakuugigaa. Nuunniangit**chungnaqtuq**.

Sentences under discussion:

Aklavik nakuugigaa. Nuunniangit**chungnaqtuq**

Aklavik naku - u - gi - gaa

Aklavik goodness - be - feel.towards - IND.3.SG.SUBJ.3.SG.OBJ

‘She likes Aklavik.’

nuut - niaq - nngit - hungnaq - tuq

move - FUT - NEG - *hungnaq* - IND.3.SG

‘Maybe she will stay.’

Lit.: ‘Maybe she will not move.’

The consultant’s choice of a sentence with *hungnaq* to convey what in English would be conveyed with *maybe* indicates that *hungnaq* can be used to express neutral epistemic meaning. Datum (5.96) below is a further indication of the association between *hungnaq* and neutral epistemic force. The scenario in datum (5.96) is intended to elicit expressions of neutral epistemic force. The speaker in the imagined scenario sees *p* and $\sim p$ as equally possible, and the communication intention is rendered in the stimulus as *Well, maybe she left, maybe she’s still here. I don’t know*. The consultant is asked to render this communication intention in Uummarmiutun, and when she offers a sentence that contains *hungnaq*, this indicates that *hungnaq* is appropriate for expressing neutral epistemic modality:

(5.96)

S: Let’s say you’re at a party with some friends, and you’re, you’re looking for Shiela, and you can’t find her, so you say ‘Well, maybe she left, maybe she’s still here. I don’t know’.

J: Shiela aullarungnaqtuq. Or Anihungnaqtuq. Yeah, Shiela anihungnaqtuq.¹³⁶

Sentences under discussion:

Aullarungnaqtuq

aullaq - hungnaq - tuq

leave - *hungnaq* - IND.3.SG

'Maybe she left.'

Anihungnaqtuq

ani - hungnaq - fuq

leave/go.outside - *hungnaq* - IND.3.SG

'Maybe she left.'

Also (5.97) below supports the hypothesis that *hungnaq* may be used to express neutral epistemic force, and the datum furthermore shows that *hungnaq* can also be used to express partial epistemic force. In (5.97), the interviewer has asked the consultant to translate a short dialogue containing neutral as well as partial epistemic force meanings. The dialogue looks as follows:

Brother: Do you think Simon is sleeping?

Mother: Yes, he went to bed an hour ago. He MUST be sleeping.

Dad: Yes, he's probably sleeping – but he could be reading.

The Dad's utterance presents two options which are mutually exclusive, i.e. 'Simon sleeping' and 'Simon reading'. Given that these two states of affairs are mutually exclusive, it is reasonable to expect that there will be at least one expression with a neutral force modal interpretation in the Uumarmiutun translation of the Dad's utterance; after all, it is hard for an individual to entertain two mutually exclusive states of affairs as highly likely. It is, on the other hand, possible to entertain two mutually exclusive states of affairs as equally likely. To convey the first sentence of the dialogue, the consultant offers *Simon hiñikpa?* 'Is Simon sleeping?'. As for the first part of the mother's utterance, the consultant chooses *Akku hiñikhariaqtuaq* 'he went to bed (before)'. (5.97) below is the continuation of the translation process:

(5.97)

S: [...] and then she says 'He MUST be sleeping'.

J: ... Hiñikharungnaqtuq. He must be sleeping. Hiñikharungnaqtuq ... But uh .. that's uh .. Hiñikhariaqtuq means go, he went to sleep. He go ... he ... he go to sleep. Hiñikhariaqtuq. He's going to sleep. But he ... maybe he's sleeping. Hiñikharungnaqtuq.

S: [...] and then the dad, the dad says 'Yes. He is probably sleeping'.

J: Again, hiñikharungnaqtuq.

¹³⁶ When the consultant does not translate the whole sentence in the scenario, this is probably because she finds that *Shiela anihungnaqtuq* is enough to convey the communication intention conveyed in the scenario.

- S: and then he says ‘But he could be reading’.
 J: Taiguarungnaqtuq. Taiguarungnaqtuq ‘must be reading’.

Sentences under discussion:

Hiñikharungnaqtuq

hiñik - haq - hungnaq - tuq

sleep - process - *hungnaq* - IND.3.SG

‘He must be sleeping.’ / ‘Maybe he’s sleeping’

Hiñikhariaqtuq

hiñik - haq - iaq - tuq

sleep - process - to.go.and - IND.3.SG

‘He went to sleep.’

Taiguarungnaqtuq

taiguaq - hungnaq - tuq

read - *hungnaq* - IND.3.SG

‘He could be reading’ / ‘He must be reading’

Hungnaq is part of the translations of all epistemically modalized sentences in (5.97). ‘He must be sleeping’ is translated into *hiñikharungnaqtuq* which is translated back into ‘he must be sleeping’ in line two, and into ‘maybe he is sleeping’ in line 4. In line 6, ‘Yes, he is probably sleeping’ is also translated into *hiñikharungnaqtuq*. Note that in line 8, the sentence ‘he could be reading’ is translated into an Uummarmiutun sentence containing *hungnaq*, namely *taiguarungnaqtuq*. This indicates that *hungnaq* is here used to convey neutral epistemic meaning, given that both of the states of affairs ‘Simon sleeping’ and ‘Simon reading’ can hardly be highly likely at the same time. Interestingly, the consultant translates *taiguarungnaqtuq* back into English as ‘must be reading’. Datum (5.97) thereby suggests that *hungnaq* is associated with neutral as well as partial modal force judging from the consultant’s translations back and forth between Uummarmiutun sentences with *hungnaq* and English sentences with neutral as well as partial epistemic force meaning.

Another indication that *hungnaq* is suitable for expressing neutral epistemic force is (5.98):

(5.98)

- S: What if we say that uhm .. let’s say that I’m in the living room with a friend, and then we hear from her little daughter’s room like (makes clapping sounds)
 N: Making noise
 S: Yeah some stumping (makes stumping sounds) or something. Can I then say to my friend Paniin mumirungnaqtuq, mumirungnaqtuq
 N: Paniin? Her daughter? Her daughter maybe dancing? Yeah! Yeah!

Sentence under discussion:

Paniin mumir**ungnaq**tuq
panik - in mumik - hungnaq - tuq
daughter - POS.2.SG dance - *hungnaq* - IND.3.SG
'Maybe your daughter is dancing.'

It is reasonable to interpret the scenario in (5.98) such that the speaker has neutral support for the truth of the predicational content 'your daughter is dancing' – after all, the speaker only hears stumping and clapping noises. The consultant accepts *Paniin mumirungnaqtuq* 'Your daughter is dancing-*hungnaq*' as appropriate in that scenario and uses *maybe* in the English translation. The English stronger modal *probably* would presumably also be appropriate in this scenario. Nevertheless, the consultant apparently chooses *maybe* as a translation of the sentence with *hungnaq*, which indicates that she interprets the scenario such that the observation of the stumping and clapping sounds yields neutral epistemic force towards the verification of the predicational content.¹³⁷

A challenge to the hypothesis that *hungnaq* can express neutral epistemic force is that *hungnaq* is not always accepted in verbal words containing an ending which is marked for interrogative mood. Neutral epistemic force modals should be able to co-occur with interrogative, while partial epistemic force modals cannot combine with interrogative mood (see Boye, 2012a). In (5.99) below, the rejected sentences are marked with *:

(5.99)

- a. (J) Tikitch**ungnaq**pa? 'did he arrive-*hungnaq*?'
Question in interview was: "Can we say, can we ask somebody like
Tikitch**ungnaq**pa?"
- b. (L) Tikitch**ungnaq**pa? 'did he arrive-*hungnaq*?'
Interview question was: "What do you think about this word here:
Tikitch**ungnaq**pa?"
- c. (L) Signe, Peter tikitch**ungnaq**paa? 'Signe, did Peter arrive-*hungnaq*?'
Sentence produced and accepted by consultant during the elaboration on the word
Tikitch**ungnaq**pa? "Oh we could even say it like that."

¹³⁷ Also data (5.108) and (5.109) presented later in the chapter show that *hungnaq* is associated with the English neutral force modal *maybe*.

- d. (N) *Peter havagungnaqpa? ‘is Peter working-*hungnaq*?’
Interview question was: “What about uhmmm .. Peter havagungnaqpa? Can you ask somebody that?”
- e. (N) *Tom Inuvingmiitchungnaqpa? ‘is Tom in Inuvik-*hungnaq*?’
Interview question was: “Can you ask somebody Tom Inuvingmiitchungnaqpa?”
- f. (N) *Tom hilamiitchungnaqpa? ‘is Tom outside-*hungnaq*?’
Interview question was: “Can you also say Tom hilamiitchungnaqpa?”
- g. (N) When asked on email whether Nuutchungnaqpa (‘he move-*hungnaq*?’) is a word, and whether a word could end in -*hungnaqpa*? N answered “NO”.

As can be seen from (5.99a-g), the acceptance of *hungnaq* in combination with interrogative ending varies. The pattern seems to be that N rejects sentences where *hungnaq* and interrogative co-occur, whereas J and L accept them. Given this observation, it seems to vary among Uummarmiutun speakers whether *hungnaq* can be used with interrogative, or it may be that the suitability of *hungnaq* plus interrogative depends on the semantics of the verb stem.¹³⁸ The meaning and use of *hungnaq* in combination with interrogative awaits further research. As for the present research endeavour, the – at least occasional – ability of *hungnaq* to co-occur with interrogative supports the hypothesis that the meaning of *hungnaq* covers neutral epistemic force.

The collected data show that *hungnaq* is also suitable for expressing partial epistemic force. This was already indicated in (5.97) above. Another indicator is that sentences with *hungnaq* are frequently translated into English sentences containing *must* or *I think*, which are both suitable for conveying epistemic bias towards p in English. In (5.100), for instance, L is elaborating on the

¹³⁸ One may also note that not all consultants were asked in the same way about the acceptability of the word with *hungnaq* and interrogative. In (5.99) above, J was asked if ‘we’ can say W in (5.99a) and L was asked what she thought about W in (5.99b). In both cases, the word with *hungnaq* and interrogative is accepted. N, on the other hand, was asked if *she* could say or ask W in (5.99d-f) and she rejects all three words with *hungnaq* and interrogative. This could indicate that speakers of Uummarmiutun do not find the combination of *hungnaq* and interrogative erroneous enough to correct a learner, but still not acceptable enough for themselves to use. On the other hand, in (5.99c) L herself produces a sentence with *hungnaq* – *Signe, Peter tikitichungnaqpaa?* ‘Signe, did Peter arrive-*hungnaq*?’ – which is an extension of the sentence under discussion in (5.99b) – and states “*Oh we could even say it like that.*”. Datum (5.99c) thus indicates that some speakers may themselves use *hungnaq* in combination with interrogative. Moreover, it is reasonable to assume that datum (5.99a) is indeed valid, in spite of the interview question not being about whether J could say the word herself: J was very particular on correcting my pronunciation and rejecting words that did not make sense regardless of who the imagined utterer was (see Chapter 4, §4.2.3 for details and discussions of methodology). It is therefore reasonable to assume that she would have rejected the word with *hungnaq* and interrogative if she had not found it appropriate.

difference between *Hanngiřuq* ‘he is strong’ and *Hanngihungnaqtuq* ‘he is strong-*hungnaq*’, and the latter is translated using *must*:

(5.100)

L: Hanngiřuq is just, like plain and simple ‘He is strong’. Hanngi**hungnaqtuq**, ‘He must be strong’ – you know – there is evidence, so he must be strong.

Sentences under discussion:

Hanngi hungnaqtuq	Haangiřuq
hanngi - hungnaq - tuq	haangi - řuq
strong - <i>hungnaq</i> - IND.3.SG	strong - IND.3.SG
‘He must be strong.’	‘He is strong.’

Moreover, sentences with *hungnaq* are regularly matched with scenarios where the speaker is fairly but not fully certain that p is the case. In (5.101), the consultant is asked about the sentence *Ii, tikitchungnaqtuq* ‘yes, he has reached/arrived-*hungnaq*’. After translating the sentence with an English sentence containing *must*, she describes a scenario where it can be uttered. In that scenario, the speaker who uses *hungnaq* has evidence which points in the direction that p is the case without confirming the truth of p completely:

(5.101)

S: Could they also say *Ii, tikitchungnaqtuq* ?

L: They could say it like that, ‘He must have reached’. Nobody called us or nobody radioed us, **Tikitchungnaqtuq**, he must have got there. Otherwise we would have heard other – you know – other uhh .. something different.

Sentence under discussion:

Ii, tikitchungnaqtuq
ii tikit - hungnaq - tuq
yes arrive - <i>hungnaq</i> - IND.3.SG
‘He must have reached.’

Further indicators that *hungnaq* is appropriate for conveying partial epistemic force are data like (5.102) below. The speaker notices that Peter’s shoes are missing, which is arguably a fairly good piece of evidence that he has left the party. *Aullarungnaqtuq* ‘he leave-*hungnaq*’ is however preferred over the simple declarative *Aullaqtuq* ‘he leave’ because, as the consultants state, “*you’re not sure*”:

(5.102)

- S: If we imagine that we are at a party, and we are wondering, is Peter, has Peter left? And then we go to the entrance, and I see that his shoes are missing. And then I'm thinking, oh that's probably, this means that he has left. Can I then say Aullaqtuq ?
- J: Yeah.
- S: Aullaqtuq..
- J: No! Aullar**ungnaqtuq**
- N: Yes.
- J: Because you're not sure.
- N: Yes. Cause you're not sure.
- J: But if you see, Aullaqtuq.

Sentences under discussion:

Aullar ungnaqtuq	Aullaqtuq
aullaq - hungnaq - tuq	aullaq - tuq
leave - <i>hungnaq</i> - IND.3.SG	leave - IND.3.SG
'He has left- <i>hungnaq</i> '	'He has left.'

Hungnaq is apparently appropriate when there are reasons to believe that the modal source (Peter's missing shoes) yields strong but not full force towards the belief that he has left.

We have now seen data indicating that *hungnaq* can be used to express neutral epistemic force as well as data indicating that *hungnaq* can express partial epistemic force. These findings suggest that *hungnaq* is not lexically restricted to either of these forces, but rather covers both. Further data supporting this hypothesis are the many data where consultants associate sentences with *hungnaq* with neutral as well as with partial epistemic force in one and the same elaboration. Judging from cases like (5.103), it appears that *hungnaq* covers the semantic space which English divides between neutral epistemic force expressions like *might be* and *could be* on the one hand and partial epistemic force expressions like *must be* on the other:

(5.103)

The interviewer has asked the consultant about the meaning of *Hialugungnaqtuq* 'it is raining-*hungnaq*':

- L: It must be raining. If you're not too certain, you say Hialug**ungnaqtuq**. 'It might be raining'. It's not definitely .. not like Hialuktuq. Hialug**ungnaqtuq** means 'It must be raining'. 'It could be raining' or 'It might be raining'.

Sentences under discussion:

Hialugungnaqtuq	Hialuktuq
hialuk - hungnaq - tuq	hiluk - tuq
rain - <i>hungnaq</i> - IND.3.SG	rain - IND.3.SG
‘It must/might/could be raining.’	‘It is raining.’

Also (5.97) presented earlier is an indication that *hungnaq* covers a broader concept consisting of neutral as well as partial epistemic force: in (5.97), the consultant translates a short dialogue containing weak as well as strong epistemic statements. She uses *hungnaq* in the translations of all epistemic statements in the dialogue. It is furthermore interesting to note that in (5.97), an English sentence with the neutral epistemic force expression *could be* is translated into the Uummarmiutun sentence *Taiguarungnaqtuq* ‘he reading-*hungnaq*’ which is then translated back into an English sentence containing *must be*. This happened several times during the interviews; an English sentence containing an epistemic expression gets translated into an Uummarmiutun sentence with *hungnaq* which is then translated back into an English sentence with an epistemic modal restricted to a different epistemic modal force than the initial English sentence. Data like (5.97) and (5.103) suggest that the distinction between neutral and partial epistemic force may not always be relevant to the use and interpretation of utterances with *hungnaq*. If *hungnaq* covers neutral as well as partial epistemic force, the label ‘less than full force’ (see Chapter 3, §3.3.4; Boye, 2012a) seems to be suitable in the description of *hungnaq*. However, before drawing conclusions about *hungnaq*’s force restrictions it must be checked whether *hungnaq* can be used to express full epistemic force in addition to partial and neutral force.

Full epistemic force

The previous sections have presented data from which it is reasonable to conclude that *hungnaq* can be used to express neutral (‘possibility’) and partial (‘necessity’) epistemic force. Even though the data presented so far point in the direction that *hungnaq* does *not* cover full epistemic force (i.e. full certainty), any option that could challenge this conclusion should be explored. Studies in the formal semantics tradition offer a piece of motivation for checking whether *hungnaq* covers full epistemic force: von Stechow and Gillies (2010) argue that epistemic use of English *must* is never weak, and conclude that *must* expresses full speaker certainty based on indirect evidence. *Hungnaq* should therefore be checked for the ability to express full epistemic force, now that some

researchers have claimed that other epistemic modals cover full force. If it turns out that *hungnaq* may convey any epistemic force – i.e. neutral, partial and full – then *hungnaq* is not a modal on the present definition.¹³⁹

(5.104) below is one of the few data suggesting that *hungnaq* could cover full epistemic force. In (5.104), a sentence with *hungnaq* is offered to convey a communication intention where the speaker confidently infers that the subject referent has gone fishing:

(5.104)

S: Let's imagine that your friend, he uhm ... he doesn't believe that Joe has gone fishing. But you know: Hey! All his fishing gear is gone! And the truck is gone, so he MUST have gone fishing. How do you say this to your friend; 'All this is gone, so he MUST have gone fishing'.

J: Taamna inuk nikairungnaqtuq

Sentence under discussion:

Taamna inuk nikairungnaqtuq
taamna inuk nikaiq - hungnaq - tuq
that person fishing - *hungnaq* - IND.3.SG
'That person must have gone fishing.'

Must is present in the English sentence which the consultant translates into a sentence with *hungnaq*. The presence of *must* does not rule out that *hungnaq* covers full epistemic force, if one follows von Fintel and Gillies' (2010) analysis of *must*, where *must* is claimed to express 'confident inference'. Even if one does not endorse von Fintel and Gillies' (2010) conclusions regarding *must*,¹⁴⁰ it is still possible to argue that the word with *hungnaq* in (5.104) expresses full epistemic force: the sentence with *hungnaq* is offered in a scenario which could be interpreted such that the speaker's communication intention is to convey the result of a confident inference based on indirect evidence, i.e. that she considers the set of evidence as sufficient to yield full force towards the verification of the proposition 'he has gone fishing'. It moreover happened a couple of times during the interviews that a sentence with *hungnaq* was translated into an English simple declarative

¹³⁹ Such finding would not exclude *hungnaq* from the category of modal expressions as defined by e.g. von Fintel and Gillies (2010) and Matthewson (2015). Von Fintel and Gillies (2010) argue that English *must* is always strong, such that *must(p)* entails the truth of p, and Matthewson (2015) – referring to Martina Faller's work – argues the same for Cusco Quechua *mi*. When von Fintel and Gillies (2010) and Matthewson (2015) still view *must* and *mi* as modal expressions, this means that they – contrary to the definition of modality employed in the present study – admit expressions of full epistemic force into the category of modality (see Chapter 3 for discussion).

¹⁴⁰ See arguments in Chapter 3 that *must* is not a full epistemic force expression.

sentence – a syntactic construction which is commonly used to express full epistemic force in English (Boye, 2012a), i.e. full certainty. However, in those cases the consultant would add further explanations of the sentence with *hungnaq* which indicated that it is associated with less than full certainty. Several data have been presented which indicate that *hungnaq* is closely associated with neutral or partial epistemic force. The remainder of this section presents data which indicates that *hungnaq* is in fact *restricted* to these meanings, i.e. data which contradict any hypothesis that the meaning of *hungnaq* covers full epistemic certainty.

Datum (5.105) demonstrates that *hungnaq* is inappropriate when the speaker makes a confident inference. If the evidence is such that it does not make the speaker confident, however, *hungnaq* is appropriate.

(5.105)

Scenario: My husband picks up all his hunting gear and he puts on his boots and he takes off with his hunting partner. And then I go back to my sewing and the phone rings. The person asks me where my husband is. Can I say *Anguniarungnaqtuq* ?

- N: No, you already know that he's out already. You already know that he's hunting. *Anguniarungnaqtuq*, you're thinking, 'I think he went hunting'.
[..]
- S: Then I sound too insecure maybe .. ?
- N: .. uh .. but you already know he's, he got ready for going hunting, putting his.. yeah. So you can't say *Anguniarungnaqtuq*. Unless uhh .. He went out, out of the house, and you didn't see him get ready to go hunting
- S: I just saw that he left?
- N: Yeah you just saw that he left. Then you could say uh.. and he took off with his skidoo. Then you could say *anguniarungnaqtuq*. You're thinking that he went hunting. Maybe.

Sentence under discussion:

Anguniarungnaqtuq
anguniaq - *hungnaq* - *řuq*
 hunting - *hungnaq* - IND.3.SG
 'I think he went hunting.'

Also data like (5.106) indicate that *hungnaq* is not appropriate when the predicational content is the result of a confident inference:

(5.106)

- S: So is it like, if I live in another town, and I just get this phone call, and I hear that Tom has fixed my daughter's house. I don't live in the town, I haven't seen the house, but I know that Tom is a really good carpenter. Could I then say Tutqiktuq ?
- J: Yeah.
- S: Yeah? That's good enough too, I don't have to say Tutqigunnaqtuq ?
- J: Yes. Just Tutqiktuq. Because you could picture that house, it's really nice.

Sentences under discussion:

Tutqigunnaqtuq	Tutqiktuq
tutqik - hungnaq - tuq	tutqik - tuq
fix.well - <i>hungnaq</i> - IND.3.SG	fix.well - IND.3.SG
'It is fixed well- <i>hungnaq</i> '	'It is fixed well'

In (5.106), the speaker infers that the house is fixed well based on the information that Tom has done the job. Judging from J's last statement "*you could picture that house, it's really nice*", the preference of the simple declarative over the corresponding sentence with *hungnaq* seems to be due to the speaker's belief in the proposition as a true representation. This belief is based on an inference, but there is no decreased certainty and *hungnaq* is not part of the preferred utterance. Last but not least, also (5.107) shows that *hungnaq* is sensitive to whether the speaker is certain or not:

(5.107)

- S: [...] and what if we imagine you hear, from uhm .. an Elder that Sally has returned.. now, to Inuvik, she has returned now. And you tell that to a friend. How would you tell that, pass on that ..
- J: Taamna inuk utiqtuq. 'That person is come back'.
- S: You haven't seen it, but you heard it from an Elder. So you don't have to Utirungnaqtuq?
- J: No.
- S: You can say utiqtuq.
- J: Yeah. Because I heard it from basic Elder. But if I hear it from you young: Utirungnaqtuq
- J&S: [laughter]
- S: Cause I think this is very interesting here when to use *hungnaq* and when not to, and it seems you have to be very [very] ..
- J: [certain]. Certain. Because I heard it from Elder, Utiqtuq. You, Utirungnaqtuq, because I kind of doubt your story.

Sentences under discussion:

Utirungnaqtuq	Taamna inuk utiqtuq
itiq - hungnaq - tuq	taamna inuk utiq - tuq
return - <i>hungnaq</i> - IND.3.SG	that person return - IND.3.SG
'She has come back- <i>hungnaq</i> '	'That person has come back.'

In datum (5.107), the appropriateness of *hungnaq* seems to depend on who the source of the information is: when the source is a young person who is an outsider to the community, *hungnaq* is appropriate. When the source is an Elder, the simple declarative *Utiqtuq* ‘she is back’ is preferred. Elders are known to hold a lot of wisdom whereas the interviewer is not only young but also not a member of the community. The choice between *Utiqtuq* ‘she is back’ and *Utirungnaqtuq* ‘she is back-*hungnaq*’ thus seems to come down to the speaker’s assessment of how well the evidence supports the truth of the predicational content, rather than the *type* of evidence, which is a report in both cases. Reports from Elders lead to epistemic certainty while reports from less reliable sources lead to less than full certainty, and this distinction affects the consultant’s judgment of whether or not *hungnaq* should be used.

The data set leads to the conclusion that *hungnaq* is only licensed when the speaker is less than fully certain that the proposition is true, and this makes *hungnaq* a modal on the present definition of modality as unrealized force dynamic potential. Whether *hungnaq* could have evidential restrictions in addition to its epistemic modal restriction is discussed in the next section after confirming that *hungnaq* does not have root uses.

5.3.2.3 Modal type and evidential restrictions

Modal type and source

This section presents and analyzes data that shed light on whether *hungnaq* is indeed restricted to epistemic meanings, or whether *hungnaq* may also express root meanings, as root-epistemic overlap is found in other languages of the world.

Throughout the data set, sentences with *hungnaq* are consistently translated into English sentences expressing epistemic meaning (e.g. (5.103)), or explained as conveying epistemic meaning (e.g. (5.101)). The collected data show that *hungnaq* is not only associated with epistemic meaning, but actually restricted to epistemic meaning. First of all, consultants never translate sentences with *hungnaq* into English sentences favouring root interpretations such as *He has to sleep* or *She gotta eat*. Furthermore, it appears from data (5.108) and (5.109) below that *hungnaq* is in fact inappropriate when the communication intention contains root modal meaning. In (5.108), the interviewer tests if the sentence *Aullarungnaqtutin* ‘you leave-*hungnaq*’ can be used to convey a communication intention containing social force (‘deontic’) meaning. The consultant does not

approve of *Aullarungnaqtutin* as a vehicle for this communication intention, and her response indicates that *Aullarungnaqtutin* rather has epistemic meaning:

(5.108)

- S: If I wanted to say to somebody that You gotta leave, uhm .. You gotta go out, or You gotta leave. Could I tell this person by saying *aullarungnaqtutin* ?
- L: .. *Aullarungnaqtutin* ? When you say *aullarungnaqtutin*, you say, you're asking ... 'Did you leave?'
- S: Oh, oh okay
- L: [...] You're gonna leave me, must be or hahah! No not 'You gotta leave'. *Naqtutin* means 'maybe'. You're saying 'You're gonna leave' and then you add 'maay-be'.

Sentence under discussion:

Aullarungnaqtutin
 aullaq - hungnaq - tutin
 leave - *hungnaq* - IND.2.SG.
 'You're gonna leave, maybe.'

Also in (5.109), the interviewer is asking a question to find out whether a sentence with *hungnaq* can be used to convey a root modal meaning. In the scenario in (5.109) there is no identifiable authority necessitating the actualization of the predicational content, and the type of root meaning tested for *hungnaq* here is physical ('dynamic') force rather than social force. Again, the sentence with *hungnaq* comes out as inappropriate for conveying root modal meaning:

(5.109)

- S: I'm running late and I have to leave the party, I'm with some friends, I'm visiting, and I have to leave. ... Because I'm running late and AHHH! .. Can I then say *Anihungnaqtunga* ?
- J: ... *Aniaqhifunga*.
- S: *Aniaqhifunga* ... But *Anihungnaqtunga* ? Does that work when I .. ?
- J: No, hihhi! You're saying 'Maybe I'm outside, I don't know'
- J&S: Hahahahah!

Sentences under discussion:

Anihungnaqtunga
 ani - hungnaq - tunga
 leave/go.outside - *hungnaq* - IND.1.SG
 'Maybe I'm outside.'

Aniaqhifunga
 ani - aqhi - funga
 leave/go.outside - be.about.to - IND.1.SG
 'I'm about to leave.'

In addition to the negative evidence presented above, observations regarding the combinatorial restrictions on *hungnaq* within the verbal word yield the hypothesis that the form *hungnaq* is not appropriate for expressing root modal meanings. Recall that postbases in Inuktitut are restricted to certain slots depending on the type of meaning they express, and the relational order of postbases in the word can be used to disambiguate ambiguous postbases (Fortescue, 1980; Trondhjem, 2008, 2009; see also Chapter 2, §2.4.1). Epistemic modal affixes belong in the slot closer to the verb ending than expressions of root modal meaning (see Fortescue, 1980: 261, 272). (5.110) below show that *hungnaq* requires the slot relationally closer to the ending in combination with negation, whereas the opposite is the case for *řukřau*, which was shown in §5.3.1 to encode root modal meaning, more specifically partial social force:

(5.110) *Partially repeated from (5.90)*

a. Accepted

nngit + *hungnaq* Aningitchungnaqtuq
 ani - **nngit** - **hungnaq** - tuq
 leave - NEG - maybe - IND.3.SG
 ‘Maybe he didn’t leave.’

b. Rejected

hungnaq + *nngit* * Anihungnanngitchuq
 ani - **hungnaq** - **nngit** - tuq
 leave - maybe/probably - NEG - IND.3.SG

If it had been the case that root meanings could be expressed by means of *hungnaq*, we would expect the order *hungnaq* + *nngit* to be acceptable. This is however not the case, judging from data like (5.110). For comparison, the Utkuhikřalingmiutut cognate *junngnaq* ‘can X, be able to X, might X’ as described by Briggs et al. (2015) appears to be compatible with root as well as epistemic interpretations. In combination with *nngit* ‘not’ the relative order disambiguates the interpretation between epistemic and root meaning; *nngit*+*junngnaq* means ‘might not’, and *junngnaq*+*nngit* means ‘cannot’ (see *ibid.*: 181-183).

Another indication that *hungnaq* encodes epistemic meaning only is the permitted order of *řukřau* and *hungnaq* when these two postbases co-occur in the same verb:

(5.111) = (5.91)

a. Rejected

hungnaq + *řukřau* * Anihungnaqtukřauřuq
ani - **hungnaq** - **řukřau** - řuq
leave - may/can - should - IND.3.SG

b. Accepted

řukřau + *hungnaq* Havaktukřauhungnaqtuq
havak - **řukřau** - **hungnaq** - řuq
work - should - maybe - IND.3.SG
(you fixed something and) ‘maybe it’s gonna work’

As can be observed in (5.111), *hungnaq* must occur closer to the ending than *řukřau* in order for the word to be acceptable. The same restrictions on order apply when *hungnaq* combines with another root modal expression, namely *yumiřnaq* ‘may, can’, as it appears from (5.112):

(5.112) = (5.60)

a. Accepted

yumiřnaq + *hungnaq* Aniyumiřnarungnaqtuq
ani - **yumiřnaq** - **hungnaq** - tuq
leave - may/can - maybe - IND.3.SG
‘Maybe he could go out’

b. Rejected

hungnaq + *yumiřnaq* * Tunihungnarumiřnaaraa
tuni - **hungnaq** - **yumiřnaq** - raa
sell - maybe - may/can - IND.3.SG.SUBJ.3.SG.OBJ

These combinatorial restrictions on *hungnaq* support the finding that *hungnaq* is indeed restricted to epistemic meaning only: lexical ambiguity between root and epistemic meaning would arguably have resulted in the availability of root interpretations of *hungnaq* in cases like (5.110b), (5.111a) and (5.112b), which are all judged as unacceptable by the speakers of Ummarmiutun consulted for the present study.

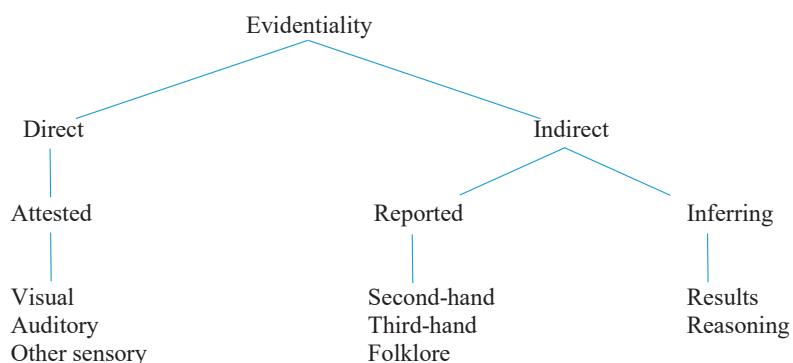
Evidential restrictions

Before we conclude, this sub-section explores evidential properties of interpretations of sentences with *hungnaq* with the intention of determining whether evidentiality plays a role in the semantics of *hungnaq*.

It may be considered whether the lack of full certainty evoked in interpretations of sentences with *hungnaq* could in fact be a result of evidential restrictions rather than restrictions on modal force. That is, if *hungnaq* is restricted to an indirect information source, this could be the reason why sentences with *hungnaq* are associated with less than full certainty. This is what von Fintel and Gillies (2010) argue is the case for English *must*. The reason why this is hardly the case for *hungnaq* is that *hungnaq* is apparently not appropriate for conveying full epistemic force, as we saw in section §5.3.2.2. One of the indications that less than full epistemic force is part of *hungnaq*'s semantics is the following: if indirect evidence had been enough to license the use of *hungnaq*, it is reasonable to expect that *tutqigungnaqtuq* 'It is fixed well-*hungnaq*' would have been preferred in (5.106) analyzed above. In (5.106), the speaker in the scenario has inferential evidence based on the report that Tom has fixed the house. The consultant interprets the scenario such that this evidence leads the speaker to believe that the house was fixed well, and she prefers *tutqiktuq* 'it is fixed well' rather than *tutqigungnaqtuq* 'it is fixed well-*hungnaq*'. *Hungnaq* therefore appears to be sensitive to the degree of certainty. As for the possible evidential restrictions, these would come in addition to the restriction on less than full force. The present sub-section explores whether the data warrants the inclusion of evidential restrictions in the entry for *hungnaq* in addition to its modal restrictions.

A likely candidate for evidential restrictions on *hungnaq* is 'indirect evidentiality', as this type of evidentiality seems to comprise the various information sources observed to be compatible with *hungnaq*. Willett's (1988) taxonomy of evidential meanings is repeated on the next page for convenience:

Figure 5.2: Willett's (1988: 57) taxonomy of evidential types



Several examples in the previous sub-sections show that *hungnaq* is compatible with ‘inferential’ evidentiality, which – according to Willett’s (1988) taxonomy – is a type of indirect evidentiality. In datum (5.95) above, for instance, the speaker in the scenario uses *hungnaq* in a sentence expressing a conjecture regarding whether the subject referent will stay in Aklavik, which is based on his knowledge that she likes Aklavik. That is, the speaker of the sentence with *hungnaq* can be said to draw an inference based on some observation of evidence for the subject referent’s preferences, which he takes to be enough to yield less than full force towards the verification of ‘she will not move [from Aklavik]’. Also in (5.113) below the speaker in the scenario can be said to experience evidence – the sound like rain on the roof, i.e. direct audible evidence – from which she makes an inference with less than full force for the verification of ‘it is raining’:

(5.113)

S: Let’s say that you are in your house. And then you hear a sound like rain on your roof. You just hear the sound. So you guess it’s raining. But you only hear the sound. How would you say that in Uummarmiutun?

J: Hialug**ungnaq**tuq.

Sentence under discussion:

Hialug**ungnaq**tuq
 hialuk - hungnaq - tuq
 rain - *hungnaq* - IND.3.SG
 ‘It’s raining-*hungnaq*.’

Reports are also permitted as evidence when *hungnaq* is used in an utterance, as we saw in (5.107). Like inferentiality, reportative is a type of indirect evidence (see Figure 5.2). The rest of the section will therefore seek to determine whether *hungnaq* is lexically restricted to indirect evidentiality (in addition to epistemic modality).

Sentences with *hungnaq* are clearly compatible with indirect evidentiality, but the question is, however, if the predicational content in the scope of *hungnaq* is *always* supported by indirect evidence. Consider datum (5.114):

(5.114) = (5.102)

- S: If we imagine that we are at a party, and we are wondering, is Peter, has Peter left? And then we go to the entrance, and I see that his shoes are missing. And then I'm thinking, oh that's probably, this means that he has left. Can I then say Aullaqtuq ?
- J: Yeah.
- S: Aullaqtuq..
- J: No! Aullarungnaqtuq
- N: Yes.
- J: Because you're not sure.
- N: Yes. Cause you're not sure.
- J: But if you see, Aullaqtuq.

Sentences under discussion:

Aullarungnaqtuq	Aullaqtuq
aullaq - hungnaq - tuq	aullaq - tuq
leave - <i>hungnaq</i> - IND.3.SG	leave - IND.3.SG
'He has left- <i>hungnaq</i> '	'He has left.'

In (5.114) *hungnaq* is preferred over the corresponding simple declarative in a scenario where the speaker has indirect – here inferential – evidence for the subject referent's whereabouts. It is however interesting to note J's and N's explanations of why *aullarungnaqtuq* is preferred in the scenario in (5.114); both of them mention the speaker's lack of certainty. This suggests that *hungnaq* is more closely associated with the lack of full certainty rather than with a specific information source. In (5.114), J does afterwards say that the simple declarative is appropriate if the speaker sees the person leaving, but this should not be taken as evidence that *hungnaq* is restricted to indirect evidence. It may just as well be that we tend to be more certain of assumptions based on visual stimuli than of assumptions based on inferences, and that this is the reason why J associates the simple declarative with visual evidence. This hypothesis is supported by (5.115)

below, where N approves of the use of *hungnaq* in a situation where the speaker has a visual experience of the state of affairs represented by the proposition but nevertheless experiences decreased certainty about its truth:

(5.115)

Datum from email correspondence:

S wrote: “You are looking out the window and see rain. But you're not really sure that it is rain. Can you say: **Hialugungnaqtuq**”

N wrote: “Ii” (‘yes’)

Sentence under discussion:

Hialugungnaqtuq

hialuk - hungnaq - tuq

rain - *hungnaq* - IND.3.SG

‘It must/might/could be raining (based on visual experience).’

That *hungnaq* is sensitive to degree of certainty only, and not to evidentiality, is supported by the observation that the lack of certainty appears to be much more salient in the criteria consultants give for using *hungnaq*. Recall e.g. (5.106) where the choice of whether to use *hungnaq* or not depends on whether the speaker had heard the story from a young person who is an outsider to the community or from an Elder. According to the quote in (5.106), *hungnaq* is appropriate when the reporter is a young outsider and the speaker doubts her story, but not when the reporter is an Elder. The predicational content is inferred based on a report in both cases, and the speaker’s degree of certainty is seen as the salient criterion for using *hungnaq* or not. Also (5.116) below illustrates *hungnaq*’s sensitivity to certainty rather than type of information source. In (5.116), the interviewer has asked the consultant to choose between *Āauna hanngihungnaqtuq* ‘Oh my, he is strong-*hungnaq*’ and *Āauna hanngivaluktaqtuq* ‘Oh my, he seems strong’ in a scenario where the speaker observes the subject referent carrying a big bull caribou. The consultant chooses neither of them, but rather prefers the simple declarative *Hanngīfuq* ‘He is strong’. The reason seems to be that she interprets the scenario such that the speaker is fully certain:

(5.116)

N: Hanngīfuq. Cause you know, he’s carrying that big bull. You know he’s strong. [...] **-hungnaqtuq** is ‘maybe’, not too sure. Maybe just showing off.

Sentences under discussion:

Hanngiřuq	Hanngi hungnaq tuq
hanngi - řuq	hanngi - hungnaq - tuq
strong - IND.3.SG	strong - <i>hungnaq</i> - IND.3.SG
‘He is strong.’	‘Maybe he is strong.’

In (5.116) *hanngiřuq* ‘he is strong’ is preferred because the speaker in the scenario perceives the observation as sufficient to yield full epistemic force towards the truth of the predicational content, while *hanngi**hungnaq**tuq* ‘he is strong-*hungnaq*’ is appropriate when the speaker cannot rule out that the subject referent is just showing off. Again the choice of whether to use *hungnaq* or not appears to be dependent simply on the speaker’s degree of certainty and not the type or existence of evidence.

Judging from the collected data it turns out that *hungnaq* admits any type of evidence which yields less than full epistemic force towards the truth of the predicational content.¹⁴¹ The conclusion is thus that *hungnaq* does not encode a restriction on indirectness, but rather requires decreased certainty only, i.e. *hungnaq* restricts modal force only.

5.3.2.4 Conclusions: Meanings covered by *hungnaq*

The postbase *hungnaq* is restricted to epistemic meaning only. The meaning of *hungnaq* covers neutral and partial epistemic force i.e. ‘less than full force’, but not full epistemic certainty. *Hungnaq* thereby clearly falls within the category of modal expressions, because *hungnaq* does restrict the force parameter and the restriction is on an unrealized force-dynamic potential. It is not the case that the observed ‘decreased certainty’ meaning associated with *hungnaq* can be explained as a restriction on indirect evidentiality. Judging from the collected data on *hungnaq* and evidentiality, *hungnaq* is closely associated with, but not restricted to, inferential evidentiality. It turns out that *hungnaq* is not sensitive to evidentiality, but rather to degree of certainty, i.e. epistemic force, only.

¹⁴¹ Recall from §5.2.5 that also *niq* ‘apparently’ is compatible with any information source, including indirectness as well as direct observation of the state of affairs represented by the proposition. *Niq* is nevertheless different from *hungnaq*. *Niq* may be appropriately described as a mediative evidential, because consultants associate sentences with *niq* with the existence of evidence (however without restrictions on type). *Hungnaq*, on the other hand, is hardly a mediative evidential, since the existence of the evidence does not appear to be a salient property of the interpretation of sentences with *hungnaq* judging from the consultants’ explanations and judgments.

The list below sums up the answers to the research questions put forward at the beginning of the section:

Answers to research questions for *hungnaq*:

Modal force

- *hungnaq* can be used to express neutral and partial force, i.e. less than full force
- *hungnaq* is not appropriate for expressing (the non-modal) full epistemic force

Modal type and source

- the meaning of *hungnaq* does not cover root modality
- *hungnaq* does not have evidential restrictions

5.3.3 huk

5.3.3.1 Research questions

In the Uummarmiutun dictionary (Lowe, 1984: 184), the meaning of the postbase *huk* is described as ‘to want to’. As can be observed from the examples below, the initial consonant of *huk* assimilates with the final consonant of consonant final stems as in (5.117a-b) and attaches directly to vowel ending stems as in (5.117c) (see Lowe, 1984: 184, for details):

(5.117)

- | | | | |
|----|--|----|--|
| a. | Aullar u ktuq
aullaq - huk - tuq
leave - <i>huk</i> - IND.3.SG
‘He wants to leave’ | b. | Havag u ktuq
havak - huk - tuq
work - <i>huk</i> - IND.3.SG
‘He wants to work’ |
| c. | Nirih u ktuq
niri - huk - tuq
eat - <i>huk</i> - IND.3.SG
‘He wants to eat’ | | (Lowe, 1984: 184) ¹⁴² |

¹⁴² The sentences and translations are from Lowe (1984). The segmentation and glossing are done by me based on Lowe (1984, 1985a) and MacLean (2014).

Given Lowe's (ibid.) description, *huk* appears to be a modal expression. More specifically, *huk* appears to encode the meaning that the subject referent's desires produce a partial volitional force towards the actualization of the predicational content. Volitional force, i.e. 'bouletic' modality, is a type of root modal meaning (see Figure 5.1 and Chapter 3, §3.1.2).

The present section explores whether *huk* indeed is an expression of partial volitional force, and checks whether *huk* is restricted to root modal meaning, or whether *huk* also has evidential meaning. Lexical ambiguity between bouletic modality and hearsay evidentiality where the claim is attributed to the subject referent is found in German *wollen* 'want, hearsay' (see e.g. Öhlschläger, 1989: 233-234; Palmer, 2001: 42; Eide, 2005: 32), and it is therefore interesting to see if *huk* could display a similar lexical overlap between bouletic modal meaning and evidentiality. In addition to these questions, the present study of *huk* addresses a couple of questions arising from the study of similar postbases in other Inuktitut dialects. Postbases in other Inuktitut dialects which – like Uummarmiutun *huk* – are described as 'want' turn out to admit inanimate subject referents. This is shown by Johns (1999), who analyzes *guma* in Labrador Inuttut in Northern Labrador and *huaq* Qairnirmiut in Qamanittuaq in Baker Lake.¹⁴³ When occurring with inanimate subjects, it is questionable whether *guma* and *huaq* contribute with a notion of modal force of the type 'volition' (see ibid.). The present analysis of Uummarmiutun *huk* therefore explores which interpretations arise when *huk* occurs in verbs with inanimate subjects. Another aspect that needs to be discussed in a study of *huk* is the ability of this postbase to express a meaning comparable to English *feel*, which is not a modal concept on the present definition of modality. This meaning is covered by cognates in other Inuktitut dialects (see MacLean, 2014, on North Slope Iñupiaq; Briggs et al. 2015, on Utkuhikšalingmiutut). This opens the question whether a) there is one lexical item involving the form *huk* in Uummarmiutun which encodes a meaning that covers the 'feel' meaning as well as the modal meaning, or b) there are two lexical items involving the form *huk*; one with modal meaning, and one with a 'feel' meaning. MacLean's (2014) comprehensive description of the closely related North Slope Iñupiaq dialect will be used to inform the discussion of this issue.

The research questions for *huk* can be summarized as follows:

¹⁴³ Labrador Inuttut and Qairnirmiut are both sub-dialects of Eastern Canadian Inuktitut.

Research questions for *huk*:

Modal source and type of force (§5.3.3.2):

- Does *huk* express the modal meaning partial volitional force ('bouletic modality')?
- Does the meaning of *huk* cover hearsay evidentiality attributed to the subject referent?
- Is the modal source restricted to the subject referent's desires?
- How does *huk* contribute to the interpretation when the subject referent is inanimate, and how may this affect the semantic description of *huk*?

Other meanings (§5.3.3.3):

- Does the semantic proposal for *huk* need to predict the non-modal 'feel' interpretations in addition to the modal interpretations, or are we dealing with two separate lexical items?

5.3.3.2 Modal meanings

Desirability meanings

The data collected for the present study confirm that Uummarmiutun *huk* can be used to express a meaning similar to English 'want to' ('bouletic modality') as predicted by the dictionary entry in Lowe (1984: 184).

(5.118)

Scenario: Tamma looks at his little son. And the son is always playing whale hunts with his figures and his dolls. So Tamma is thinking Oh, he wants to be a whaler when he grows up. He thinks that because he saw him playing. So how does he say that in Uummarmiutun?

N: Qilalugarniallahi**huk**tuq

Sentence under discussion:

Qilalugarniallahi**huk**tuq

qilalugaq - niaq - lla - hi - huk - tuq

whale - hunt - able.to - become - *huk* - IND.3.SG

'He wants to learn to be a whaler.'

(5.119)

Scenario: Let's say the husband, it's a husband and a wife, and he says Let's go fishing! And then the wife says No we have to stay at home, Peter might come and visit us.

J translates this as Aimahifunga Peter puulaariarniarungnaqtuq.

- S: What if she, she's not really sure, might come
J: [...] Puulariaruktuq. He wants to come visit.
S: Is she then certain that he's coming, or is she..
J: Puulariaruktuq, not know. He told his sister, I'm gonna visit you.

Sentences under discussion:

Aimahifunga Peter puulaariarniarungnaqtuq

aima - hi - funga P. pulaaq - iaq - niaq - hungnaq - tuq
at.home - FUT - IND.3.SG [NAME] visit - go.and - FUT - might - IND.3.SG
'I'm gonna stay at home. Peter might come and visit us.'

Pulaariaruktuq

pulaaq - iaq - huk - tuq
visit - go.and - huk - IND.3.SG
He wants to come visit.

In (5.118), the son's presumed desire to become a whaler is described by a sentence with *huk*. In (5.119), a sentence with *huk* is offered in a scenario where Peter has informed the speaker that he is going to visit, and the speaker informs her husband that Peter wants to come and visit without committing fully to the assumption that he will indeed do so. Judging from data like (5.118) and (5.119), *huk* contributes to the interpretation by evoking the idea of the subject referent's desires as a source producing a force towards actualization of the predicational content. According to the definition of modal meaning in Chapter 3, the force-dynamic potential referred to by modals is unrealized force-dynamic potential, and *huk* appears to refer to a source and a force while it remains silent with respect to whether or not the subject referent's desires succeed in pushing the event all the way to actualization. This is further confirmed by data like (5.120) below:

(5.120) = (5.44)

- S: What about agliyumaaqtunga ?
N: ... Is it up to you to know if you gonna grow or not?
[..]
N: Agliyumaaqtunga. I, I know I'm gonna grow. The kid is saying?
S: Yeah?... Does that sound like a funny way to say ..?
N: Yeah [...] That's funny way to saying, because.. it's not up to the kid to .. or xx, a kid could wish, aglihuktunga.

Sentences under discussion:

? Agliyumaqtunga	Aglihuktunga
agli - yumaaq - tunga	agli - huk - tunga
grow - intend.to - IND.1.SG	grow - <i>huk</i> - IND.1.SG
? ‘I intend to grow.’	‘I wish to grow.’

(5.120) furthermore shows that *huk* does not require the actualization of the state of affairs to be in the subject referent’s control.

It appears from the data presented above that *huk* expresses that the subject referent’s desires push the state of affairs towards – but do not cause – actualization. It seems reasonable to analyze the force in (5.117), (5.118), (5.119) and (5.120) as partial force: if *huk* had expressed neutral force, the interpretations in those data would have been such that the subject referent merely had an accepting attitude towards the potential actualization of the given state of affairs. Rather, all examples evoke the idea of the desires pushing for the actualization as opposed to merely allowing it, and hence ‘partial force’ seems to be the correct label.

Evidentiality

As noted in the introduction to the section, the German modal *wollen* can, like Ummarmiutun *huk*, be used to express that the subject referent’s desires produce a volitional force towards the actualization of the predicational content. This is illustrated in (5.121) below. In addition to the volitional meaning in (5.121a), German *wollen* can be used to express hearsay evidential meaning, where the claim made by the utterance belongs not to the speaker, but to the subject referent. I.e. the utterance represents a claim made by the subject referent about himself in (5.121b):

(5.121)

- a. Sie will ins Kino gehen.
sie will in - s Kino gehen
3.SG.FEM.NOM want.to in - ACC cinema go
‘She wants to go to the movies’. (Öhlschläger, 1989: 166)¹⁴⁴
- b. Er will Schauspieler gewesen sein.
Er will Schauspieler gewesen sein
3.SG.MASC.NOM claim.to actor be.PERF be.AUX
‘He is supposed to have been an actor (so he claims)’ (Eide, 2005: 32)¹⁴⁵

¹⁴⁴ Translation, segmentation and glossing are based on Öhlschläger’s (1989: 166-7) descriptions.

¹⁴⁵ Segmentation and glossing are based on Eide (2002: 32).

Since linguistic expressions exist which encode hearsay evidential meaning attributed to the subject referent in addition to actualizational force from the subject referent's desires, it is worthwhile to check if the meaning of *huk* also covers hearsay evidentiality. As it appears from (5.122) below though, the hearsay evidential reading available for sentences with German *wollen* is not available for sentences with Uummarmiutun *huk*:¹⁴⁶

(5.122)

Data from email correspondence:

- a. S asked if Hanngi**huk**tuq can mean 'He says he is strong' or 'He claims to be strong' ?¹⁴⁷
N replied that the word means 'He wants to be strong'

Sentence under discussion:

Hanngi**huk**tuq
hanngi - huk - tuq
strong - *huk* - IND.3.SG
'He wants to be strong'

- b. S asked if Havag**uk**tuq can mean 'He says he is working' or 'He claims to be working' ?
N replied that Havag**uk**tuq means 'He/She wants to work'

Sentence under discussion:

Havag**uk**tuq
havak - huk - tuq
work - *huk* - IND.3.SG
'S/he wants to work'

Inanimate subjects

In the attempt to pinpoint which modal meanings *huk* can be used to convey, it is important to note that *huk* is not restricted to animate subject referents. A specification of the modal source as 'the subject referent's desires' and a specification of the type of force as 'volitional' may hence be too restrictive. When *huk* is used with an inanimate subject referent, it is not evident that the

¹⁴⁶ To avoid confusion: in the datum (5.119) presented above, the speaker has heard from Peter that he is going to visit and says Pulaariar**uk**tuq 'he come and visit-*huk*' to her husband. This is not a manifestation of hearsay evidential meaning, as the interpretation is not 'Peter claims to be visiting', but rather 'Peter wants to come and visit', which is a root modal interpretation.

¹⁴⁷ *Huk* is highlighted here for convenience. *Huk* was not highlighted in the email.

interpretation includes the idea of the subject referent's desires as the source of the modal force. Consider (5.123) and (5.124) where *huk* is used with weather denoting stems:

(5.123)

L: Kalluguktuq it wants to thunder! Goodness sake, let it thunder, it wants to thunder! [...] It waaants to thunder – you know – it just continuously wants to thunder. Kalluguktuq aaaaalli kalluguktuq

Sentences under discussion:

Kallug <u>u</u> ktuq	Aqaalli
kalluk - huk - tuq	aqaaalli
thunder - <i>huk</i> - IND.3.SG	[EXCL]
'It wants to thunder.'	'Oh my gosh!'

(5.124)

L elaborates on the difference between *qanniguktuq* and the corresponding simple sentence *qannikuktuq*:

L: And when they just say qannikuktuq it's just snowing. But now it's starting to come down, qanniguktuq. More than just little bit of snow. Lots now.

Sentences under discussion:

Qannik <u>u</u> ktuq	Qannig <u>u</u> ktuq
qannik - tuq	qannik - huk - tuq
snow - IND.3.SG	snow - <i>huk</i> - IND.3.SG
'It's snowing.'	'It's starting to snow (a lot)'

This ability to occur with inanimate subjects is neither predicted by Lowe's (1984) entry, nor by the descriptions of the Siglitun (see Lowe, 2001) or North Slope Iñupiaq (see MacLean, 2014) cognates. However, as shown in Johns (1999), *guma* in Labrador Inuttut in Northern Labrador and *huaq* in Qairnirmiut in Baker Lake can – like Ummarmiutun *huk* – express human desire and may also occur with inanimate subjects. (5.125) and (5.126) below show that *guma* and *huaq* can be used to relate the actualization of the predicational content in the utterance to the desires of the subject referent:

(5.125) Inuttut:

sugusik sini - **guma** - juk
child.ABS sleep - want - INTR.PART.3.SG¹⁴⁸
'The child wants to sleep'

(5.126) Qairnirmiut:

nutaraq hini - **guaq** - tuq
child.ABS sleep - want - INTR.PART.3.SG
'The child wants to sleep' (Johns, 1999: 176)

The ability of *guma* and *huaq* to occur with inanimate subjects is demonstrated in (5.127), (5.128), (5.129) and (5.130):¹⁴⁹

(5.127) Inuttut:

silalu - **guma** - juk
rain - want - INTR.PART.3.SG
'It looks like it is going to rain' (also works for snow, etc.)

(5.128) Qairnirmiut:

nipalu - **guaq** - tuq
rain - want - INTR.PART.3.SG
'It looks like it's going to rain' (also works for snow, etc.)¹⁵⁰

(5.129) Inuttut:

savik siKumi - **guma** - juk
knife.ABS break - want - INTR.PART.3.SG
'The knife is going to break'

¹⁴⁸ Recall from Chapter 2 that eastern Inuktitut dialects do not tend to mark tense oppositions on the verb ending. The gloss PART stands for 'participial mood', and the function of the ending glossed as such in eastern dialects is similar to the function of the endings glossed as 'indicative' in the western dialects.

¹⁴⁹ Also the Utkuhikšalingmiutut cognate *huk* may be used with inanimate subjects as in *Hupiguhuktuq* 'It's feeling the draft' (i.e. feeling the effect of the draft, said e.g. of a hanging towel swinging back and forth in the draft), and *Tatqihuktuq* 'The moon is becoming, or has become full.' (Briggs et al. 2015: 115-119).

¹⁵⁰ Johns (1999: 182) and her reviewers note that similar types of examples are found in some British dialects of English, e.g. *It wants to rain* (= It looks like it is going to rain), and in Dutch, Belgian French, and Southern American English. However, as Johns (ibid.) points out the sentence **It wants to rain* is odd in most dialects of North American English. In Qairnirmiut, Inuttut and – as we shall see – Uummarmiutun on the other hand, the use of *huaq*, *guma* and *huk* to convey non-volitional subject-internal modal force is fully conventionalized.

(5.130) Qairirmiut:

pana hiqumit - **suaq** - tuq
snow.knife.ABS break - want - INTR.PART.3.SG
'The snow knife is going to break (Johns, 1999: 182-3)

As Johns (1999: 183) points out, *guma* and *huaq* do not express volition in these examples. She proposes a unitary meaning for the respective postbases where the entity has an internal property such that the event will occur, and calls this an 'internal future' (see *ibid.* e.g. pp 177). Alternatively, this meaning property could be labelled aspectual, e.g. inchoative aspect, in that the event is beginning the process towards actualization. Johns (1999) argues that the specific interpretation of sentences with *guma* and *huaq* depends on whether the subject is animate. That *guma* and *huaq* indeed take an internal property of the subject referent as the source of the force rather than expressing simple future is evident from the consultants' judgments that (5.129) and (5.130) are not appropriate in a context where one is using a brand-new knife in an attempt to cut a stone.¹⁵¹ In such event, the knife will surely break, but this will not be due to inherent properties of the knife (Johns, 1999: 187). If, on the other hand, the knife is e.g. old or rusty, then the sentences with *guma* and *huaq* in (5.129) and (5.130) can be used (Johns, 1999). In the terminology used in the present study, *guma* and *huaq* encode that the actualization of the predicational content is related to an internal property of the subject referent. Let us return to Uummarmiutun *huk* and see if a similar analysis could be suitable.

(5.131) and (5.132)¹⁵² support the hypothesis that Uummarmiutun *huk* – like Inuttut *guma* and Qairirmiut *huaq* – is restricted to subject-internal sources, but not to the desires of the subject referent:

(5.131)

L elaborates on the sentence *Havik naviguktuq* 'the knife break-*huk*':

L: [...] maybe it's not a good knife. Maybe it's a poor.. old knife or, just not made for that kind of whatever we're doing. Maybe we're cutting *quaq*¹⁵³. And then Afauna *havik naviguktuq*, Gee this knife keeps wanting to break while I'm doing it, this cutting.

¹⁵¹ Sentences with the future morpheme – *niat* in Inuttut and *niaq* in Qairirmiut – are preferred instead (Johns, 1999: 187).

¹⁵² Note that the explanations in (5.131) and (5.132) did not occur in the same session. They were shared by the same consultant, however in 2014 and 2015 respectively.

¹⁵³ Frozen meat or fish.

Sentences under discussion:

Afauna havik **naviguktuq**
EXCL havik navik - huk - tuq
oh.no knife break - *huk* - IND.3.SG
'Gee, this knife keeps wanting to break.'

(5.132)

L: Havik navikihifuq .. that knife will probably break. Havik navi..**guktuq**. The knife WANTS to break. [...] Havik **naviguktuq**. You know – when you're pressing on it, it keep coming apart or .. and then you fix it and then you press it again, it come .. It just won't stay together. **Naviguktuq**. It just won't, even though you keep mending it. From the pressure of you using it, it just keeps falling apart.

Sentences under discussion:

Havik navikihifuq	Havik naviguktuq
havik navik - kihi - fuq	havik navik - huk - tuq
knife break - FUT - IND.3.SG	knife break - <i>huk</i> - IND.3.SG
'The knife will probably break'	'The knife wants to break.'

In (5.131) the consultant associates *Havik naviguktuq* 'the knife break-*huk*' with a context where the knife has the property of being of poor quality. That is, the source of the force is internal to the subject referent. Like Qairnirmiut *guma* and Inuttut *huaq* in (5.127), (5.128), (5.129) and (5.130), Uummarmiutun *huk* appears to be concerned with future orientation or perhaps more accurately an aspectual meaning such as inchoative. In (5.132), the user's pressure on the knife could be seen as the producer of the force and hence the source pushing for actualization could be partly external. However, the consultant adds to the scenario that the person keeps mending it, but the knife still keeps falling apart. It therefore seems more likely that the source of the actualization of the breaking is properties internal to the knife. Consider also (5.133) and (5.134) where internal properties of the fabric and the picture frame respectively constitute the modal source:

(5.133)

S has asked if *takihuktuq* 'it be long-*huk*' is a word:

N: Oh! **Takihuktuq**, yeah! There is a **takihuktuq**. .. uhmmm ... It wants to be long. You're cutting a parka cover, or, you cut out a parka cover, and you made it. And you made it a little bit shorter, at one time you made it shorter. But it still wanna be long! The cover. It still wants to be long, **takihuktuq**. It wants to be long.

S: So it wants to be, the parka cover wants to be longer than it is, or?

N: Yeah. Yeah.
 J: Yeah.
 N: You cut it to shorten it,
 J: And then shorten it and then, There's too long again! **Takihuktuq**.
 S: Oh, so it's still too long
 N: Yeah, still too long.
 S: Even though I wanted it to be shorter, but this is working against me
 N: I did, I did.. yeah. I didn't cut it enough to make it to fit wherever I wanted it, Afaa **takihuktuq** manna.

Sentences under discussion:

Takihuktuq	Afaa takihuktuq maanna
taki - huk - tuq	EXCL taki - huk - tuq maanna
long - <i>huk</i> - IND.3.SG	oh.my long - <i>huk</i> - IND.3.SG negative.attitude.then
'It wants to be long.'	'Oh no, it still wants to be long.'

(5.134)

S: What if we imagine that, I'm watching my .. my brother. And he's putting a picture on the wall. But the frame, the frame of the picture, it's kind of fragile and old and it looks like it's not that solid. And he puts it on the wall and I'm watching that. ... Can I then say to him, **kataguktuq**.
 J: No.
 S: No?
 J: **Kataguktuq** ?
 S: **Kataguktuq**, yeah?
 J: **Kataguktuq** means .. it's gonna drop
 S: Yeah? But if I think that's gonna happen now that the frame is so fragile and the picture is so ..
 J: Yeah
 S: Can I say that?
 J: ... **Kataguktuq**, yeah. Yeah you could say that
 S: Can I also say **katangniaqtuq** ?
 J: Yeah. Same.

Sentences under discussion:

Kataguktuq	Katangniaqtuq
katak - huk - tuq	katak - niaq - tuq
fall - <i>huk</i> - IND.3.SG	fall - FUT - IND.3.SG
'It's gonna drop.'	'It's gonna drop.'

It should be noted that J at first does not endorse the use of *kataguktuq* 'it fall-*huk*' in the scenario in (5.134). She does however later accept the word, and associates it with simple future. Datum (5.134) therefore does not in itself provide evidence that *huk* is restricted to subject-internal

sources, but merely that it is *compatible* with subject-internal sources. The same is true for (5.133). Nevertheless, let us consider (5.133) and (5.134) in the light of (5.135) below. (5.135) is shared by two speakers of Uummarmiutun who associate their dialect more closely with the Alaskan Iñupiaq dialect and use the sound rendered in the orthography as *s* where other speakers of Uummarmiutun in Inuvik tend to use the sound rendered as *h* (see Chapter 2, §2.3.2):

(5.135) From consultation with speakers of Alaskan Iñupiaq in Inuvik:

- a. Qinniraaq katag**u**ktuq¹⁵⁴
 qinniraaq katak - suk - tuq
 picture fall - **suk** - IND.3.SG
 ‘The picture is gonna fall.’

Accepted in context where the picture frame is fragile

- b. ? Piļļautanngitkin, qinniraaq katag**u**ktuq.
 piļļautaq - nngit - kin, qinniraaq katak - suk - tuq
 do.right - NEG - IND.2.SG.SUBJ.3.SG.OBJ picture fall - **suk** - IND.3.SG
 ‘You’re not doing it right, the picture is gonna fall.’

Rejected as uttered to a person who is doing a really bad job putting the picture on the wall

In (5.135a) the force towards actualization comes from within the subject referent, in that it is a property internal to the picture, and the sentence *Qinniraaq katag**u**ktuq* ‘picture fall-*suk*’ is accepted. In (5.135b), on the other hand, the force towards actualization comes from a source external to the subject referent, namely the person who is doing a bad job putting the picture on the wall, and the sentence with *suk* is rejected. Alaskan Iñupiaq is very closely related to Uummarmiutun (see Chapter 2, §2.3), and the two speakers who shared (5.135) reside in Inuvik and interact with speakers who identify their language as Uummarmiutun. It is therefore reasonable to assume that their use of *suk* is comparable to other Inuvik-residing speakers’ use of *huk*. (5.135) therefore supports the hypothesis that Uummarmiutun *huk* is inappropriate if the circumstances producing the force towards actualization are external to the subject referent.

As argued above, *huk* refers to general internal properties as the modal source rather than desires when occurring in the combination with an inanimate subject referent. The question is now

¹⁵⁴ Like the initial sound in the Uummarmiutun postbase *huk* merges with the final consonant of the stem, so does the initial sound in the Alaskan Iñupiaq cognate *suk* ‘want’.

whether *huk* always yields a desirability interpretation in combination with animate subject referents. The combination with an animate subject referent tends to yield a desirability interpretation, but it should be noted that the general subject-internal property interpretation is also available in some contexts, as in (5.136):

(5.136)

- S: But how would you say if you're like *sniff sniff* OH! I have to sneeze! How would you say that in Inupiatun?¹⁵⁵
- N: Tagiuqtuaqhifunga taguiq-tuaq-hifunga hifunga, I'm saying, it's a difference in, I'm gonna sneeze! And you're saying what?
[..]
- S: Ooh I have to sneeze!
- N: yeah
- S: I'm going [to]
- N: [I] have to: tagiuqturuktunga [..] Because you're saying I have to. And this one (pointing at Tagiuqtuaqhifunga in the notes) is uhmm .. Oooh I'm going to ..
- J: I better blow my nose !
- N: Tagiuqtuaqhifunga tavra! EEEEEEEEE!!!! hahah!
- S: haahh warning
- N: Just like you are warning people, tavra tagiuqtuaqhifunga alliiiiii!

Sentences under discussion:

Tagiuqtuaqhifunga	Tagiuqturuktunga
taguiq - tuq - aqhi - funga	taguiq - tuq - huk - tunga
sneeze - experience - about.to - IND.1.SG	sneeze - experience - <i>huk</i> - IND.1.SG
'I'm gonna sneeze'	'I have to sneeze'

Tavra tagiuqtuaqhifunga alliiiiii!	
tavra taguiq - tuq - aqhi - funga	alli
[EXCL] sneeze - experience - about.to - IND.1.SG	[EXCL]
'Watch out, I'm gonna sneeze ahhhh!'	

In (5.136), Tagiuqturuktunga 'I (experience) sneeze-*huk*' is offered to convey the communication intention phrased in English as *I have to sneeze*. Sneezing is something physical, i.e. a bodily function, and it thus seems that *huk* can be used in Tagiuqturuktunga to refer to physical properties of the subject referent, which constitute a source producing partial physical force – rather than a partial volitional force – towards the actualization of the sneezing. This does not mean that a

¹⁵⁵ Recall from Chapter 2 that some speakers use the name Inupiatun while others prefer Uummarmiutun.

desirability interpretation is unavailable for *Tagiuqturuktunga* ‘I (experience) sneeze-*huk*’; another consultant offered two translations of *Tagiuqturuktunga*, namely ‘I wanna sneeze’ as well as ‘I’m gonna sneeze’. Nevertheless, these findings show that *huk* does not always yield a desirability interpretation when the subject referent is animate.

The data presented so far indicate that *huk* is restricted to properties of the subject referent as the modal source, and that a restriction on the source to the *desires* of the subject referent is too narrow. Some data, however, suggest that *huk* has other restrictions. Firstly, given that *huk* only requires that the modal source is internal to the subject referent, the rejections of sentences with *huk* in (5.137) and (5.138) below are unexpected:

(5.137)

- S: Peter’s little baby is sick, and uhm and they go the doctor, and she just keeps, being sick. This little baby. Can Peter then say Paniga atniaruktuq ?
 N: (shakes head)
 S: What does that mean, atniaruktuq ?
 N: She wants to be sick
 S: Like, that’s what she wants
 N: Yeah.

Sentence under discussion:

? Paniga atniaruktuq
 Panik - ga atniaq - huk - tuq
 daughter - 1.SG.POS.SG sick - *huk* - IND.3.SG
 ? ‘My daughter wants to be sick.’

(5.138)

- S: If my child is like, she keeps growing and getting bigger and bigger and bigger. Can I then say Aglihuktuq ? about her?
 J: Aglifūq.
 S: Aglifūq. .. But I can’t say aglihuktuq ?
 J: No. Because it’s natural they’re growing.

Sentence under discussion:

? Aglihuktuq
 agli - huk - tuq
 grow - *huk* - IND.3.SG
 ? ‘she grow-*huk*’

It could be that the sentences with *huk* are rejected in (5.137) and (5.138) because the subject referent is human, and this makes the desire-interpretation so easily available to the degree that the sentences become odd. However, the sentence *nautchiat nauhuktut* ‘plants grow-*huk*’ – with a non-human subject referent – also appears inappropriate, given the rejection in (5.139):

(5.139)

N is asked about her opinion on the sentence *Nautchiat nauhuktut*.

- N: Theee plan-, uhh Flowers want to grow?
 S: Yeah?
 N: No.
 S: Can it mean something like, that they keep growing, like out of control, keep growing?
 N: .. Nauhimaŕut ?
 S: Nauhimaŕut.
 N: Mmhhh. (confirming) Keep, keep growing. *Nautchiat nauhimaŕut*. And this one is what? (referring to another sentence in the interview guide)
 S: *Nautchiat aglihuktut*
 N: No. No.

Sentences under discussion:

? <i>Nautchiat nauhuktut</i>	<i>Nautchiat nauhimaŕut</i>
nautchiaq - t nau - huk - tut	nautchiaq - t nau - hima - ŕut
flower - PL grow - <i>huk</i> - IND.3.PL	flower - PL grow - DUR - IND.3.PL
	‘The flowers keep growing.’
? <i>Nautchiat aglihuktut</i>	
nautchiaq - t agli - huk - tut	
flower - PL grow - <i>huk</i> - IND.3.PL	

Contrary to Uummarmiutun *huk*, the Siglitun cognate *suk* is appropriate in a scenario similar to (5.139); a Siglitun speaker translated the sentence *nausuktuq* ‘it bloom-*suk*’ into ‘it wants to bloom’ and described a scenario where the flowers keep blossoming. Interestingly, the sentences with Uummarmiutun *huk* are rejected in (5.139) even though there should be nothing preventing an interpretation where the physical properties of the flowers produce a force towards the actualization of them growing. The sentences are nevertheless rejected. This suggests that *huk* encodes additional restrictions besides relating the actualization of the predicational content to properties of the subject referent. The identification of those additional restrictions that predict the rejections in (5.139) remain to be explored.

At this point we can conclude that *huk* does not correspond to the meaning ‘want’ (pace Lowe, 1984: 104), but rather is an expression of subject-internal partial force modal meaning. The type of force expressed by *huk* is thus not limited to volitional force, but rather a more general notion of actualizational force, of which volitional force is a sub-type (see Table 5.1). Also, the modal source is restricted to subject-internal location, though not to the *desires* of the subject referent, and the desire-interpretation seems to be easily available when the subject referent is animate.

5.3.3.3 Other meanings

It seems that the form *huk* in Uummarmiutun is not limited to the modal meaning partial force from a subject-internal source, but that it may also contribute to the interpretation such that the subject referent ‘feels’ or ‘is in a state of’ the state denoted by the stem. Similar properties are noted also for Yup’ik *yug*, which may give rise to ‘feel’ interpretations as well as ‘want’ interpretations (de Reuse in Johns, 1999: 194; Fortescue et al. 2010: 481), and for cognates in other Inuktit dialects (see Fortescue et al. 2010: 481). If one looks up ‘lazy’, ‘happy’ and ‘lonely’ in the Uummarmiutun dictionary (Lowe, 1984), one finds the following:

(5.140)

- | | | | |
|----|--------|---|--|
| a. | lazy | - | iqiah huk tuq
‘is lazy’ (Lowe, 1984: 230) |
| b. | happy | - | quvia huk tuq
‘is happy’ (Lowe, 1984: 225) |
| c. | lonely | - | alia huk tuq
‘is lonely’ (Lowe, 1984: 231) |

That *huk* can be used to express a concept like ‘feel’ or ‘be in a state of’ was confirmed by speakers of Uummarmiutun consulted for the present study, who would report e.g. that the sentence *quvia**huk**tuq* translates into ‘she is happy’. The ‘be in a state of’ concept expressed by the sentences in (5.140) is a non-modal meaning, since the subject-internal properties have apparently – probably as a response to outer stimuli – succeeded in pushing the subject referent all the way to a state of

actually experiencing the state denoted by the stem. That is, the force-dynamic potential is *realized*, and hence the interpretation falls outside the definition of modal meaning as unrealized force-dynamic potential.

The question is now whether a) there are two lexical items with the form *huk*; one for the ‘be in a state of’ meaning and one for the ‘subject-internal partial force modal’ meaning, or b) the form *huk* has one single entry denoting a concept which gives rise to ‘be in a state of’ interpretations in some contexts and ‘subject-internal partial force modal’ interpretations in others. Descriptions of postbases similar to *huk* in other Inuktitut dialects are inconsistent with respect to whether they propose one or two lexical entries for the given form. Let us work through some of the proposals made for other dialects and see if they can inform the account of Uummarmiutun *huk*.

The entry for *huk* in the Utkuhikšalingmiutut dictionary reads:

1. Feel X (an emotion);
2. Feel an Xing sensation, feel the effect of X;
3. Feel like Xing (in response to physical or emotional need), be on the verge of Xing;
4. Feel like having some X (Briggs et al. 2015: 115).

It thus seems that Utkuhikšalingmiutut *huk*, like Uummarmiutun *huk*, may give rise to desirability interpretations (sense 3 and 4 in Briggs et al. (2015: 115)) as well as interpretations where the subject feels the state denoted by the stem (sense 1 and 2 in Briggs et al. (2015: 115)). One of the example sentences provided for *huk* in Briggs et al. (2015) which includes the concept ‘feel’ is rendered here in (5.141):

(5.141) Utkuhikšalingmiutut:

Ilirahuktuq
ilira - huk - tuq
fear.of.disapproval - feel - PART.3.SG
‘He feels afraid of disapproval or scolding.’ (ibid: 116)

Whereas Briggs et al. (2015) have one entry for Utkuhikšalingmiutut *huk*, MacLean (2014) proposes two entries for North Slope Iñupiaq *suk*: *suk¹* ‘to want to V’ and *suk²* ‘to be in a state of V-ing or being V’. Another interesting aspect of MacLean’s (2014) handling of *suk* is that *suk¹* and *suk²* are described as having slightly different phonological properties: as for *suk¹* ‘to want to V’, the initial consonant merges with the final consonant of the stem when it attaches. This property is

indicated in the entry where *suk¹* is rendered as +[s]uk-.¹⁵⁶ MacLean's (2014) *suk¹* 'to want to V' corresponds to the Uummarmiutun *huk* figuring in the data analyzed in §5.3.3.2 and described in Lowe's (1984: 104) entry in terms of meaning as well as phonological properties. As for North Slope Iñupiaq *suk²* 'to be in a state of V-ing or being V', on the other hand, MacLean's (2014) dictionary states that this postbase *deletes* the final consonant of the stem when it attaches. This property is indicated in the entry where *suk²* is rendered as -suk-. An example from MacLean's (2014) entry for *suk²* 'to be in a state of V-ing or being V' is given in (5.142). Note that *suk²* has deleted the final consonant of the stem *suqpak-*:

(5.142) North Slope Iñupiaq

- suqpak-* (i) to be outrageous or do something outrageous
suqpasuk- (i) to be uncomfortable, feel shame from worrying about what others think of one

(MacLean, 2014: 657)

Consider also (5.143) below from MacLean's (2014) dictionary, which indicates that both *suk¹* and *suk²* are involved in *iglaḡusuk-* 'to grin'.

(5.143) North Slope Iñupiaq

- iglaq-* (i) to laugh (MacLean, 2014: 72)
iglaḡuk- (i) to want to laugh
iglaḡusuk- (i) to grin; (i) to be unable to keep from smiling (MacLean, 2014: 657)

The final *q* of the stem *iglaq-* 'to laugh' merges with the initial *s* in *suk*, which indicates that this is *suk¹* 'want', corresponding to the modal *huk* in Uummarmiutun. In *iglaḡusuk-* 'to grin', the final *k* of *iglaḡuk* has been deleted by the postbase *suk*, which must hence be the *suk²* 'be in a state of V-ing'.

Given the close relationship between Uummarmiutun and North Slope Iñupiaq, a reasonable hypothesis is that Uummarmiutun *huk* 'be in a state of' involved in (5.140) corresponds to the North Slope Iñupiaq *suk²* 'to be in a state of V-ing or being V' which deletes the final consonant of the stem. *Huk* on the 'be in a state of' interpretations may hence have different

¹⁵⁶ See MacLean (2014: xxvii) for a key to the symbols used to indicate the phonological properties of the postbases.

phonological properties than *huk* on the modal interpretations which merges with the final consonant of the stem. If *huk* has different phonological properties conflating with the ‘be in a state of’ meaning and the modal meaning respectively, we may be dealing with two separate postbases, and the semantic proposal put forward in the present study should only pertain to the modal *huk*. If, on the other hand, *huk* on the ‘be in a state of’ interpretations and *huk* on the modal interpretations are in fact the same form, then we are probably dealing with one form with two meanings, and it may be the case that the form *huk* has a broader meaning consisting of the non-modal ‘be in a state of’ meaning plus the modal ‘subject-internal partial force’ meaning.

To confirm the hypothesis that there are two postbases in Uummarmiutun of the form *huk* with different phonological properties, it should be checked if Uummarmiutun *huk* deletes the final consonant of the stem whenever it yields the ‘be in a state of’ interpretation. In the examples in (5.140) above, *huk* is preceded by a vowel in all three cases. This could mean that there was no consonant to delete, and the data thereby neither confirms nor rejects the hypothesis. Alternatively, it may be the case that *huk* has actually deleted a final consonant from the stems involved in (5.140). The available Uummarmiutun examples where *huk* gives rise to a ‘be in a state of’ interpretation thereby do not directly settle the question. There is nevertheless some indication in MacLean’s (2014) dictionary that *huk* may have deleted a consonant in (5.140a). Compare MacLean’s (2014) description of North Slope Iñupiaq *iqiasuk-* ‘lazy’ with the Uummarmiutun word for ‘lazy’ in Lowe’s (1984) dictionary:

(5.144) North Slope Iñupiaq

- iqIk* (*root*) laziness; lack of initiative; lethargy; boring; uninspiring; lack of eagerness, unwillingness
- iqiasuk-* (*i*) to not feel like working or doing something productive, to be lazy
(MacLean, 2014: 657)

(5.140a) Uummarmiutun

- iqiahuktuq* ‘is lazy’ (Lowe, 1984: 230)

In North Slope Iñupiaq, the root *iqIk* ‘laziness’, is involved in *iqiasuk-* ‘to feel/be lazy’ according to MacLean (2014: 116, 657). In the entry for *iqIk* (MacLean, 2014: 116), it appears that some

words involving this root contain the postbase *ak* ‘to be V; to accomplish V; to be V-ing’ (MacLean, 2014: 402) or *aq⁴* ‘to V via or using or involving an N’ (MacLean, 2014: 409). If that is the case, then we have an explanation for the *a* figuring between *iqIk-* and *suk* in *iqiasuk-*; the *a* is either the postbase *ak* or the postbase *aq*, and moreover, *suk* has deleted a consonant when attaching to *iqIk+ak / iqIk+aq⁴*.¹⁵⁷ The same analysis could be extended to Uummarmiutun. In that case, the stem involved in *iqiahuktuq* in (5.140a) would be either *iqiak-* or *iqiaq-*, and *huk* has deleted the final *k* or *q*. Another option is that in fact the postbase *a* ‘to V with intensity, or with emotion’ (MacLean, 2014: 399) is involved in North Slope Iñupiaq *iqiasuk-* and Uummarmiutun *iqiahuk-*, such that it consists of *iqik+a+huk*. In that event, no consonant has been deleted by *huk*, and hence there is no way to determine whether *iqiahuk-* involves a consonant deleting *huk* ‘be in a state of’ or a merging *huk* ‘want/modal’. Nevertheless, even if it is the postbase *a* ‘to V with intensity, or with emotion’ (MacLean, 2014: 399) which is involved in *iqiahuk-* (and in the other words in (5.140) for that matter), it is still worth noting that North Slope Iñupiaq seems to have two *suk* with different phonological properties which correspond to different meanings: in (5.142) above, *suk* clearly deletes a consonant from the stem and expresses ‘be in a state’, and in (5.143) it is clear that two *suk* are involved; one merges with the final consonant and expresses ‘want’, and the other deletes the final consonant and expresses ‘be in a state’. Assuming that phonological properties are stored along with the expression in the mental lexicon, MacLean’s (2014) description indicates that we are dealing with two lexical items with different phonological properties.

If MacLean (2014) is right about *suk¹* and *suk²*, then we should assume that the same is true for Uummarmiutun in the absence of indications to the contrary. I therefore conclude that Uummarmiutun has a postbase *huk* ‘be in a state of’ which is stored in the mental lexicon with the phonological properties of deleting the final consonant, and a postbase *huk* ‘subject-internal partial force modal’ which is stored in the mental lexicon with the phonological properties of merging with the final consonant of consonant final stems.

¹⁵⁷ The postbases *ak* and *aq⁴* are both the kind of postbases that delete the final consonant of the stem when they attach, and hence the deletion of the final *k* in the root *iqIk-*.

5.3.3.4 Conclusions: Meanings covered by *huk*

The data presented in this section confirm that *huk* may be used to express desirability as predicted by Lowe's (1984) entry where the meaning of *huk* is described as 'to want to'. More precisely, *huk* can be used to express that the subject referent's desires produce partial volitional force towards the actualization of the predicational content. On the definition of modality as unrealized force-dynamic potential, this is a modal meaning. It turns out that *huk* is nevertheless not restricted to the volitional force type, since *huk* may be used with inanimate subject referents. In those cases, however, *huk* still restricts the interpretation such that the source of the partial force is internal to the subject referent. This leads to the conclusion that *huk* restricts the location of the modal source such that it is subject-internal.

The form *huk* may also occur in sentences where it gives rise to an interpretation involving 'be in a state of'. There is nevertheless reason to hypothesize that the *huk* involved in the 'be in a state of' interpretations is different from the *huk* involved in the modal interpretations. This is the case in North Slope Iñupiaq judging from MacLean's (2014) dictionary, where the two senses appear to correlate with different phonological properties. There is no indication in the available data on Uummarmiutun that this hypothesis should not apply to Uummarmiutun. The lexical semantics to be proposed for *huk* in Chapter 7 is concerned with the lexical item *huk* which merges with the final consonant of the stem. Given the argumentation put forward here, the 'be in a state of' interpretations are not part of the encoded meaning of the postbase *huk* which merges with final consonants, but rather part of the meaning encoded by another postbase, namely the postbase *huk* which deletes the final consonant of the stem.

The list below sums up the answers to the research questions put forward at the beginning of the section:

Answers to research questions for *huk*:

Modal source and type of force:

- *huk* can be used to express the modal meaning partial volitional force
- *huk* does not cover hearsay evidentiality attributed to the subject referent
- the modal source is not restricted to the subject referent's desires

- *huk* has a broader restriction on the modal source such that it is merely located internal to the subject referent. This hypothesis is compatible with the finding that *huk* yields volitional force interpretations when the subject referent is human, as well as the finding that *huk* yields physical force from within the subject referent, when the subject referent is inanimate

Other meanings:

- The form *huk* which gives rise to ‘feel’ interpretations seems to have different phonological properties than the *huk* ‘subject-internal modal force’, and hence the conclusion that they are two forms involved in separate lexical items. The conclusion is based on descriptions of the phonological properties of their cognates in the closely related North Slope Iñupiaq dialect (MacLean, 2014).

In accordance with the finding that *huk* is not restricted to desirability, the gloss ‘want’ which has been used up until now seems too imprecise. I shall therefore use the gloss ‘inner force’ for *huk* in the remaining chapters of the thesis.

5.3.4 *lla*

5.3.4.1 Research questions

The postbase represented orthographically here as *lla* ‘to be able to, can’ is represented as *tla* in Lowe (1984: 177). The spelling *lla* is chosen here because speakers of Uummarmiutun consulted for the present study indicate that this orthographic representation is more appropriate considering the pronunciation.¹⁵⁸ All Lowe’s (1984: 177) Uummarmiutun examples with *tla/lla* are accompanied with English translations containing *can*. Two of them are rendered here. As can be seen in (5.146), *tla/lla* deletes the final consonant of consonant final stems:

¹⁵⁸ There is also no *t* in the North Slope Iñupiaq and Siglitun cognates *lla* ‘to be able to, can *V*, to have the ability to *V*’ (MacLean, 2014: 512) and *la* ‘to be able to *X*; can *X*’ (Lowe, 2001: 223) respectively.

(5.146)

- | | | | | |
|----|--|----|--|----------------------------------|
| a. | Uqatlañuq
uqaq - tla - ñuq
speak - <i>tla</i> - IND.3.SG
'He can speak' | b. | Havatlañuq
havak - tla - ñuq
work - <i>tla</i> - IND.3.SG
'He can work' | (Lowe, 1984: 177) ¹⁵⁹ |
|----|--|----|--|----------------------------------|

Judging from Lowe's (1984: 177) description of *lla* as “to be able to; can”, *lla* appears to express the modal meaning neutral physical force. The question is however, whether the physical force expressed by *lla* is restricted to a certain location of the modal source, or whether *lla* may be used to express subject-internal as well as subject-external physical force.¹⁶⁰ Moreover, Lowe (ibid.) uses *can* in the entry for *lla*, and English *can* may be used to convey permissions (see e.g. Coates, 1983), i.e. neutral social force. It should therefore be checked whether *lla* can also serve this function, and how *lla* is different from *yumiñaq* ‘can, may’ (see §5.2.8), whose meaning seems to overlap with *lla*. It also needs to be checked whether *lla* has root-epistemic overlap, since some modals – e.g. in Indo-European languages – may be used for epistemic meaning as well as root meaning. And finally, since some modals do not discriminate lexically between neutral and partial force (see §5.3.2; Matthewson, 2013, on Gitksan; Deal, 2011, on Nez Perce), it should be checked whether *lla* is indeed restricted to neutral force.

The research questions pertaining to *lla* may be summed up as follows:

Research questions for *lla*:

Modal type and source (§5.3.4.2)

- Which root modal meanings can *lla* be used to express?
- How is *lla* different from *yumiñaq*?
- Can *lla* be used to express epistemic modal meaning?

Modal force (§5.3.4.3)

- Is *lla* restricted to neutral force?

¹⁵⁹ The sentences and translations are from Lowe (1984). The segmentation and glossing are done by me based on Lowe (1984, 1985a) and MacLean (2014).

¹⁶⁰ The difference between subject-internal and subject-external physical force is repeated here for convenience (see Chapter 3, §3.1.2):

(3.3e) Peter can dance now.

He has practiced a lot:	Internal possibility.	Dynamic
He has a pair dancing shoes:	External possibility.	Dynamic

5.3.4.2 Modal type and source

Root meanings covered by *lla*

In force-dynamic terms, *lla* appears to be restricted to neutral physical force given the description in Lowe (1984: 177). The collected data set confirms that *lla* may indeed be used to express physical force and offers further insight into which types of modal sources *lla* can be used to refer to. First of all, the data set shows that *lla* can be used to express neutral force from a source internal to the subject referent such as her physical condition as in (5.147) and (5.148) or her skills as in (5.149):

(5.147)

- S: What if I say *nakuullaŋuq* ?
J: *Nakuurullaŋuq*, you could you could ... no more sickness
N: Only if they're sick. But they could recover

Sentence under discussion:

Nakuullaŋuq
nakuu - lla - ŋuq
be.well - *lla* - IND.3.SG
'She/he could recover.'

(5.148)

- L: *Nirillahifūq*. He prob .. he can eat now. Like *nirillahifūq*, he could eat himself now. He's able to eat now. Sometimes when they are sick and they are just living on straight fluid, you hear somebody say *Quyannaini Simon nirillahifūq*. Simon is eating, starting to eat now. You know – you hear that lots of people, even when they are sick and that – you know – they can't eat. Then we hear them say that too. Cause now he's starting to eat and getting healthy again.

Sentence under discussion:

Quyannaini Simon nirillahifūq
quyannaini S. niri - lla - hi - ŋuq
thank.you [NAME] eat - *lla* - start.to - IND.3.SG
'Thank Goodness, Simon able to eat now.' / 'Thank Goodness, Simon is starting to eat now.'

(5.149)

- S: Let's imagine that I have a little daughter, and I'm very proud of her because she can drumdance. And I'm very proud, and then I tell a friend: My daughter can drumdance. How would I tell her in *Ummarmiutun*?
J: *Arillaŋuq paniga*

Sentence under discussion:

Arillařuq paniga
ari - lla - řuq panik - ga
drum.dance - lla - IND.3.SG daughter - POS.1.SG
'My daughter can drumdance.'

The data show that *lla* may also be used when the source of the physical force is external to the subject referent, e.g. as in (5.150) where the weather conditions produce the neutral force affecting the actualizational potential of the subject referent going dogsledding:

(5.150)

- S: How do we say 'It has to snow, otherwise we can't go dogsledding'.
J: Hihihi, you use dogs all year round
S: Oh yeah, but if it's a sled?
J: uhhh.. Qannikpan uniarallagugut .. unia .. uhh qannikpan uniarallařutin
S: Qannikpan uniallařutin?¹⁶¹
J: Uniarallařutin (correction)

Sentences under discussion:

Qannikpan uniarallařutin
qannik - pan uniaraq - lla - řutin
snow - COND.3.SG travel.by.dogteam - lla - IND.2.SG
'If there is snow, you can go dogsledding.'

Given the data set, it seems safe to conclude that *lla* does not restrict the location of the modal force, but rather is compatible with subject-internal as well as subject-external physical force.

In addition to physical force, it turns out that *lla* may be used to express permissions as in (5.151) and (5.152):

(5.151)

Before the interview, J told S about his grandfather. When J was a kid, his grandfather would always tell him to get all the chores done first and then he could go and play.

- S: So how would your grandfather say to you: you have to sew, no .. you have to saw first ? You, you have to, you gotta finish this work, and then you can go and play. How, how would he say that in Inupiatun?

¹⁶¹ I mispronounce the target word *uniarallařutin* as *uniallařutin*. J corrects my pronunciation to *uniarallařutin*.

J: uhhh .. hanaiqqaafutin. Hanaiqqaarutin piuraariallahifutin. It means, get ready first, get everything ready, and then you could go play.

Sentence under discussion:

Hanaiqqaafutin piufaariallahifutin

hanai - qqaa - futin piufaaraq - iaq - lla - hi - futin
get.ready - first - IND.2.SG play - go.and - lla - start.to - IND.2.SG
'You get ready first, then you could go out and play.'

(5.152)

S asks about the meaning of *aturniallahifutin* 'he try to sing-lla':

S: What about uh .. aturniallahifutin

N: ... Aturniallahifutin .. aturniallahifutin ... Yeah. He can try to sing.

S: Yeah? Like 'We don't mind' or ..

N: Yeah, yeah [...] He could try to sing. You don't mind it. ... Even though he don't sound good, hahaha!

S: Cool hahah! ... Can it also mean something like his voice has healed so now he .. ha can try sing?

N: (shakes head)

S: Yeah?

N: What's that?

S: Like his throat has, his voice is back, he just had a cold and lost his voice, but now his voice is back so he can try..

N: No.

S: No?

N: You're just saying that he could try to sing.

Sentence under discussion:

Aturniallahifutin

atuq - niaq - lla - futin

sing - try - lla - IND.3.SG

'He could try to sing'

As we saw in §5.2.8, *yumiñaq* 'can, may' appears to cover the same modal meanings as *lla*, i.e. physical and social force. In §5.2.8 it was hypothesized that *yumiñaq* is different from *lla* in that *yumiñaq* seems to require the identification of the modal source, whereas *lla* only requires that the idea of a source is evoked. The hypothesis is based on the observation that when consultants discuss minimal pairs consisting of a sentence with *yumiñaq* and the corresponding sentence with *lla*, they tend to mention the modal source when they explain the meaning of a sentence with *yumiñaq* but not when explaining the meaning of sentences with *lla*. In some of the data on *lla* presented in the present sub-section, the consultants do mention the modal source, e.g. the person's

sickness in (5.148) above. This nevertheless does not mean that the interpretation of an utterance with *lla* necessarily requires the identification of the specific modal source in the same way as *yumiñaq* seems to do: it is only reasonable to expect that *lla* as a modal expression encodes a reference to the existence of a modal source. And in some contexts, the specific modal source is identified, while in other contexts it is not specified beyond being of a certain type, e.g. the type of source that yields physical force towards the actualization of the predicational content. For comparison, consider an utterance of the sentence *Yes, I can make it to your party*. In order to interpret the utterance, the hearer does not necessarily need to know exactly which circumstances could have but do not prevent the speaker from attending the party. In another context – e.g. if the hearer knows that the speaker has kids and his attendance depends on whether he finds a sitter – the hearer will obviously be able to identify the specific modal source. In the same fashion, *lla* appears to allow interpretations where the exact modal source is identified judging from data like (5.148) above as well as interpretations where the exact modal source is not identified e.g. as in data like (5.153):

(5.153) = (5.66)

S has asked L about the difference between *anillava?* ‘he go out-*lla*?’ and *aniyumiñaqpa?* ‘he go out-*yumiñaq*?’:

L: (about *anillava*?) It’s just ‘Can he go out?’ Not even considering any of whatever like .. not even considering his handicap or his illness, it’s just ‘Can he go out?’ .. But this one, *aniyumiñaqpa*?¹⁶² means .. you’re getting a little bit more into it, you say .. Considering his – you know – got pneumonia,

S: yeah?

L: *Aniyumiñaqpa* – you know – is he allowed to .. Will me taking him out affect him or [..] Like whatever it is he’s going out .. Whatever he has, will taking him on an out be good for him. You know – like it’s more in-depth.

Sentences under discussion:

Anillava

ani - lla - va
go.out - *lla* - INT.3.SG
‘Can he go out?’

Aniyumiñaqpa

ani - *yumiñaq* - pa
go.out - *yumiñaq* - INT.3.SG
‘Can he go out? (considering his condition)’

¹⁶² Some consultants prefer a long vowel in interrogative endings.

We have now seen data, which show that *lla* is suitable for conveying social force interpretations as well as physical force interpretations. It thus appears that *lla* has a broad semantics covering social as well as physical force. On the other hand, some data indicate that *lla* is slightly more closely associated with a notion of physical force. Consider (5.154):

(5.154)¹⁶³

- S: What do you think about these here, if I can ask you to choose a sentence? Or maybe more than one? (showing the following sentences on paper: *Ii, nirillařuq; Ii, niryumiřaqtuq; Ii, niryumiřaqhiřuq; Ii, nirillahifřuq*). If we say that Peter and his little son, they are at a family party and all the food is on the table and the little son he is wondering if he can take something, start eating. So Peter asks his sister. Could she respond in one of these ways maybe?
- L: (Looking at the list of sentences) *Ii, nirillařuq*. Yeah, your son can eat, he can eat. *Ii, niryumiřaqtuq*. [...] *Nirillahifřuq*. He prob .. he can eat now. Like *nirillahifřuq*, he could eat himself now. He's able to eat now. Sometimes when they are sick and they are just living on straight fluid, you hear somebody say *Quyannaini Simon niriallahifřuq*. Simon is eating, starting to eat now. You know – you hear that lots of people, even when they are sick and that – you know – they can't eat. Then we hear them say that too. Cause now he's starting to eat and getting healthy again.
[..]
- S: And what do you think about *nirillařuq*?
- L: He can eat.
- S: Like he knows how to chew, or ... ?
- L: Just uhm .. *nirillařuq*, yeah, he can eat. Like if that little – you know – can he eat? *Ii!* Some of them just answered really fast. *Ii, nirillařuq*. Let him eat.
- S: Like in permitting him to..
- L: Yeah, giving him permission to eat. *Ii, nirillařuq*. Especially if you say *ii*. Yes he can eat.

Sentences under discussion:

Ii, nirillařuq
ii niri - lla - řuq
 yes eat - *lla* - IND.3.SG
 'Yeah, he can eat'

Ii, niryumiřaqtuq
ii niri - yumiřaq - tuq
 yes eat - *yumiřaq* - IND.3.SG
 'He eat-*yumiřaq*'

Ii, niryumiřaqhiřuq
ii niri - yumiřaq - hi - řuq
 yes eat - *yumiřaq* - start.to IND.3.SG
 'He start to eat-*yumiřaq*'

Ii, nirillahifřuq
ii niri - lla - hi - řuq
 yes eat - *lla* - start.to - IND.3.SG
 'Yeah, he can eat now. / He's able to eat now'

¹⁶³ Part of this datum was also presented above as (5.148) to illustrate that *lla* can be used to express subject-internal physical force.

Quyannaini Simon nirillahifūq

quyannaini S. niri - lla - hi - fūq

thank.you [NAME] eat - lla - start.to - IND.3.SG

‘Thank Goodness, Simon able to eat now.’ / ‘Thank Goodness, Simon is starting to eat now.’

In (5.154), the interviewer has described a scenario where the communication intention contains a notion of permission. However, when the consultant gets to *li, nirillahifūq* ‘yes, he start eat-lla’ on the list, she starts to describe a scenario where the subject referent’s physical abilities are involved rather than permission. This suggests that *lla* is closely associated with physical force interpretations. It obviously does not mean that *lla* is unsuitable for conveying permission; the consultant accepts *li, nirillaŋuq* ‘yes, he eat-lla’ to convey the permission interpretation figuring in the scenario initially described by the interviewer. Also (5.155) below suggests that *lla* is closely associated with physical force interpretations. In (5.155), N paraphrases the sentence with *lla, Nikhiallaŋunga* ‘I go icefishing-lla’, as “*Nothing is stopping me. You know – I really can go*”, whereas the corresponding sentence with *yumiŋaq* seems to evoke the idea of a permission:

(5.155)

Scenario: Yesterday the speaker’s mom did not allow him to go icefishing, and he had to tell his friends that he could not come, because he was not allowed. The next day his Mom says okay, you can go. His friend comes by and then he says Today I can go! Because my mom, now it’s okay with my mom. Would he then say *nikhigallaŋunga*?

N: Yeah! *nikhigallaŋunga*.

[S asks if he could also say *nikhigarumiŋaqtunga*]

J: Yeah! You could say that too.

N: *Nikhigarumiŋaqtunga*?

J: Yeah.

N: Yeah you could probably say that

J: Because you double , double that, your mom. I mean, your mom has allowed.

N: Okay, that’s two little different ways. [...] *Nikhigallaŋunga*. That one is uhmmmm .. what I said? That one, the top one, right there

S: *Nikhigallaŋunga*?

N: Yeah. *Nikhigallaŋunga* .. *Nikhigarumiŋaqtunga*, I can. And *llaŋunga* is I – you know – I could.

S: Okay, so *nikhigarumiŋaqtunga* is My mom is not stopping me,

N: yeah

S: and the other one *nikhigallaŋunga* [is]

N: [I] can go! Nothing is stopping me. You know – I really can go.

Sentences under discussion:

Nikhig**alla**řunga

nikhigaq - lla - řunga

hook.with.a.grapple - lla - IND.1.SG

'I can go icefishing.' (nothing is stopping me)

Nikhigarumiřaqtunga

nikhigaq - yumiřaq - tunga

hook.with.a.grapple - yumiřaq - IND.1.SG

'I can go icefishing.'

It thus seems that while utterances with *lla* are indeed suitable for conveying permission interpretations, *lla* seems to be slightly more closely associated with physical force, judging from data like (5.154) and (5.155). Consider also (5.156) below:

(5.156)

N: Tuuřaq pihikt**alla**řuq

S: and what does that mean?

N: Tuuřaq can shoot

J: Could shoot

S: Can I say that if they are wondering if he has the permission to use the gun and is he old enough and is it okay that he is shooting. Can I also say it in that context that Tuuřaq pihikt**alla**řuq?

N: Well, if you know that he can do it. Then you say that

J: because you know Tuuřaq can handle the gun right way. That's the only time you could tell Tuuřaq could have a gun.

Sentences under discussion:

Tuuřaq pihikt**alla**řuq

T. pihik - taq - lla - řuq

[NAME] shoot - repeated - lla - IND.3.SG

'Tuuřaq can shoot' (He can handle a gun)

The interviewer has asked if *Tuuřaq pihikt**alla**řuq* 'Tuuřaq shoot-*lla*' can be used to convey that it is okay that Tuuřaq shoots. The consultants seem to accept this interpretation but add to the scenario by referring to Tuuřaq's skills. In other words, the sentence with *lla* appears more closely associated with skills rather than with permission directly.

To the hypothesis that *lla* is more closely associated with physical force than with permission, one may object that in (5.152) above, the physical force interpretation of *aturni**alla**řuq* 'he try to sing-*lla*' is rejected. In (5.152), the interviewer asks if the word can be used when the subject referent's voice has healed from a cold, which the consultant rejects. The reason for the rejection may however be that the scenario and the interpretation are odd: it is presumably possible to make an attempt to sing even if one has a cold. And hence the assumption that the absence of

the cold makes the subject referent capable of *trying* to sing is far-fetched, as he could indeed have tried to sing while he had the cold. A permission interpretation is thereby much more easily available in (5.152), and since *lla* is also compatible with permission interpretations, the contextually far-fetched physical force interpretation is rejected.

I conclude the section on *lla* and root modal meanings as follows: *lla* may be used to convey social as well as physical force, while there is a slightly closer association with physical force.

Epistemic meaning

There are some data in the data set that seem to suggest that *lla* has epistemic meaning. In (5.157) below, *hialullařuq* ‘it rain-*lla*’ is associated with the English neutral epistemic modal *maybe* and the idea of decreased certainty, and in (5.158) *lla* figures in the translations of English sentences conveying weak epistemic assumptions about the whereabouts of the subject referent:

(5.157)

J and S are talking about the difference between *hialukihifıq* ‘it’s going to rain’ and *hialullařuq* ‘it rain-*lla*’:

- S: Does one of them sound more certain .. that .. it’s gonna hap..
 J: Hialukihifıq, yeah. Hialukihifıq is uh .. certain. Because I seen that could, uhh.. black cloud. I know is gonna rain. Hialukihifıq.
 S: And with hialullařuq, does it sound more like mjaah .. maybe so or..
 J: Maybe. Maybe .. that’s maybe, yeah. .. Hialullařuq – you know – it’s uhh .. it’s gonna rain, but .. not certain. Hialukihifıq is uhh .. certain.

Sentences under discussion:

Hialukihifıq	Hialullařuq
hialuk - kihi - řuq	hialuk - lla - řuq
rain - FUT - IND.3.SG	rain - <i>lla</i> - IND.3.SG
‘It’s gonna rain.’	‘Not certain if it’s gonna rain’

(5.158)

S has asked N to translate the following mini dialogue:

- A: “Do you know where Peter is?”
 B: “He could be anywhere. He could be out hunting, or he could be visiting his mother. Or maybe he’s visiting his sister.”

The translation of B’s utterance is as follows:

Humiliqaa illařuq. Anguniallařuq, aakangminillařuqlu. Ataufaminiluuniin.

Sentences under discussion:

Humiliqaa **illa**fuq
humi - liqaa it - lla - fuq
where - any be - *lla* - IND.3.SG
'He could be anywhere'.

Angunia**lla**fuq, aakangmini**lla**fuqlu.
anguniaq - lla - fuq, aakang - mi - ni - it - lla - fuq - lu
hunt - *lla* - IND.3.SG mother - 3.SG.POS - LOC - be.located - *lla* - IND.3.SG - too
'He could be out hunting, or he could be visiting his mother.'

Ataufaminiluuniin
aataufaq - mi - ni - luuniin
sister - POS.3.SG - LOC - *luuniin*
'Or maybe he's visiting his sister.'

Given data (5.157) and (5.158) it could seem that *lla* encodes epistemic modal meaning in addition to root modal meaning. On the other hand, consider L's elaboration in (5.159) and (5.160) below, where the future possible actualization of the raining seems to be related to the physical properties of the clouds:

(5.159)

S has asked L if she could use the word *hialulla*fuq 'it rain-*lla*':

L: Hahah, I guess so? If it's a natural phenomenon, it could rain. It could rain *hialulla*fuq. It COULD rain. When something could do it. It's possible for it to rain. *Hialulla*fuq. [...] It definitely could rain. Something has to do with, it could rain. *Hialulla*fuq .. **-lla**fuq .. *hialulla*fuq ... I'm trying to think of a sentence I could use it, but it hardly ever .. Cause we know, if we say ... Cause with when you say *hialulla*fuq, there's a possibility that it could rain.

Sentence under discussion:

Hialullafuq
hialuk - lla - fuq
rain - *lla* - IND.3.SG
'It could rain / there's a possibility that it could rain'

(5.160)

Continuation of (5.159):

S: Would you say it (= *hialulla*fuq 'it rain-*lla*') like when you're looking out, and it's not completely grey, but it's a little bit grey.

- L: No. Maybe uhm .. I don't know of it could be used like that, but sometimes you're .. *hialullaŕuq*. Maybe the skies aren't so rainy – you know – cloudy. But even though it had those little bit of cloud, it still could rain. You know – even with those little grey clouds, *hialullaŕuq*.
- S: Oooh so because they are clouds, they could [still] ..
- L: [give] rain! Yeah, even though it's not big black, those little few little clouds *hialullaŕuq*, it still could rain, even though it's like that. I'm not 100% sure it could, but it could! You know – haha! Cause of those little rainclouds. [...] With those little tiny – you know – clouds, even though they are not very thick and heavy, *hialullaŕuq*, they still could give rain.

Sentence under discussion:

Hialullaŕuq

hialuk - lla - ŕuq

rain - lla - IND.3.SG

'It could rain / there's a possibility that it could rain'

Especially (5.160) suggests that *hialullaŕuq* 'it rain-lla' is not directly associated with an epistemic interpretation, since L does not fully endorse the scenario where the speaker observes a sign which is related to the future verification of the predicational content. The possibility that it is going to rain rather seems to be related to the physical properties of the clouds which yield physical force towards the actualization. The sentence *hialullaŕuq* 'it rain-lla' hence seems to be associated with an ability interpretation rather than an epistemic interpretation. On the other hand, it seems that the appreciation of the clouds' ability to rain is associated with the thought that 'it rain' may become true of the future, which is an epistemic notion. In this sense, *hialullaŕuq* 'it rain-lla' may be concerned with the verificational potential of the predicational content rather than the actualizational potential.

Based on the data presented so far it is hard to determine whether the epistemic aspect of the interpretation of a sentence like *hialullaŕuq* 'it rain-lla' is caused by an encoded epistemic meaning of *lla*, or whether it is an implicature derived on the basis of the encoded physical force meaning, i.e. where the clouds' ability to rain constitutes a sign that it may happen. However, the morphosyntactic restrictions on *lla* in combination with *nngit* 'negation' indicates that even though *lla* may be used to convey epistemic interpretations, epistemic meaning is probably not part of the encoded meaning of *lla*. Recall from §5.3.1 and §5.3.2 that *nngit* 'negation' precedes the epistemic postbase *hungnaq* 'probably' in the verbal word whereas the opposite order results in ungrammaticality. A root modal like *ŕukŕau* 'should', on the other hand, precedes *nngit* 'negation'

in the verbal word, whereas the opposite order is rejected. In combination with *nngit* ‘negation’, *lla* patterns like a root modal:

(5.161)

a. Accepted

lla + *nngit* Unmallangiitchuq
 uuma - **lla** - **nngit** - chuq
 be.alive(of animals) - *lla* - NEG - IND.3.SG
 ‘it can’t get back to life (i.e. it is severely wounded)’

b. Rejected

nngit + *lla* * Uumangillaŋuq
 utiq - **nngit** - **lla** - ŋuq
 be.alive(of animals) - NEG - *lla* - IND.3.SG

5.3.4.3 Modal force

That *lla* is restricted to neutral force (i.e. ‘possibility’) is clear from data like (5.162) below. The scenario under discussion is one where the speaker and hearer are at a party, and they are wondering whether Peter has left. They go to the entrance and see that his shoes are missing. The speaker is thinking that it probably means that Peter has left. The sentence *aulluqtukŋauŋuq* ‘he leave-ŋukŋau’ is rejected and explained as yielding an interpretation where Peter has to leave due to social conventions in relation to his condition. The interviewer then asks about a sentence with *lla*, *aullallaŋuq* ‘he leave-lla’, in relation to this scenario, and the sentence is explained as “*It’s up to him*”:

(5.162)

S: What if I say *aulluqtukŋauŋuq*
 J&N: Has to leave
 [..]
 J: You’re commanding Peter..
 N: ..to leave. He is getting too drunk, so he has to leave! *Aullaqtukŋauŋuq* Peter!
 [S asks about *aullallaŋuq* ‘he leave-lla’]
 J: You could go. Peter could go.
 N: It’s up to him if he wants to go or not. But he doesn’t really have to go.

Sentence under discussion:

Aullallañuq
aullaq - **lla** - ñuq
leave - *lla* - IND.3.SG
'He could go out.'

Moreover, none of the sentences with *lla* discussed throughout the interviews was associated with notions of obligation or other types of circumstances necessitating the actualization of the predicational content.

5.3.4.4 Conclusions: Meanings covered by *lla*

The collected data confirms that *lla* is suitable for expressing neutral physical force, as predicted by the dictionary entry in Lowe (1984). The data set has moreover shown that *lla* is not restricted to a certain location of the modal source. As it appears, the meaning of *lla* overlaps with the meaning of *yumiñaq*, but whereas *yumiñaq* requires identification of the specific modal source, *lla* – similarly to other modals like e.g. English *can* – allows for interpretations where the modal source is merely of the type that yields neutral physical force.

The data set also shows that *lla* may be used to convey permission interpretations. These interpretations nevertheless seem to be derived on the basis of an encoded notion of physical force, in that *lla* is more closely associated with physical force. This is evident e.g. from the data where consultants start to describe scenarios where ability is involved, even though the stimulus is a scenario where permission is targeted. The semantic proposal for *lla* in Chapter 7 will need to account for the close association with the physical force notions as well as predict the availability of permission interpretations (see also Papafragou's (2000) account of English *can* in Chapter 6, §6.3.3.3).

With regards to epistemic meaning, it turns out that sentences with *lla* can be used to communicate epistemic modal meaning. It does not seem, however, that epistemic meaning is part of the meaning encoded by *lla*. This is so, because *lla* patterns like a root modal in combination with *nngit* 'negation' in the verbal word. *Lla* may indeed be on its way to conventionalize epistemic meaning, such that the form *lla* will encode epistemic meaning as well as root meaning in the

future. But given the combinatorial restrictions of *lla* and *nngit*, it appears that the lexical item *lla* is restricted to root force only, while epistemic interpretations are available through implicatures.

The list below sums up the answers to the research questions put forward at the beginning of the section:

Answers to research questions for *lla*:

Modal type and source

- While *lla* can be used to express social as well as physical force, *lla* displays a closer association with physical force
- *lla* is different from *yumiñaq* in that *yumiñaq* requires identification of the modal source whereas *lla* does not
- *lla* can be used to express epistemic modal meaning via implicature

Modal force

- *lla* is restricted to neutral force

5.4 Summary

The summary consists of a note on each of the expressions examined in the chapter. The summarizing notes consist of a recap of Lowe's (1984) description plus the present chapter's conclusion with respect to a) whether the expression is modal and b) other findings pertaining to the expression. The summarizing notes also identify questions for future research. As for the modals in focus of the study, namely *ruk̄rau*, *hungnaq*, *huk* and *lla*, as well as the two evidentials *guuq*, *niq*, the notes identify questions that will be addressed throughout the rest of the thesis.

Enclitics

luuniin

Lowe (1984):	'Or, either ... or'
Modal?	Yes. <i>Luuniin</i> encodes neutral epistemic force (corresponding to 'epistemic possibility')

Other findings: *Luuniin* encodes disjunctive connectivity as predicted by Lowe (1984), in addition to neutral epistemic force. When attaching to verbs, both senses seem to be present at the same time; *luuniin* expresses neutral epistemic force towards the proposition p and evokes the idea of another proposition q representing a state of affairs which is equally possible, and p and q are mutually exclusive.

Future research: It needs to be confirmed whether *luuniin* conventionally encodes the idea of alternative states of affairs. Also the interpretation of *luuniin* on nominal hosts needs to be explored.

kiaq

Lowe (1984): ‘Perhaps, maybe, I wonder...’

Modal? Yes. The use of *kiaq* is compatible with neutral as well as partial epistemic force interpretations (roughly corresponding to ‘epistemic possibility’ and ‘epistemic necessity’), and thereby restricts less than full epistemic force.

Other findings: In addition to epistemic modal meaning, *kiaq* expresses that the speaker herself is wondering about the epistemic status of the proposition.

Future research: It remains to be checked whether *kiaq* has evidential restrictions and whether *kiaq* has root modal uses.

guuq

Lowe (1984): ‘Reported or repeated information; this suffix is used when the speaker is reporting something he has heard has happened or thinks has happened, or is repeating something he himself has heard someone else say. Various English translations in English are possible, such as: they say that ..., I heard that ..., he said that ...’

Modal? No. Statements with *guuq* may convey any degree of epistemic force, i.e. *guuq* does not encode restrictions on force.

Other findings: When the presence of *guuq* appears to affect the epistemic status of the proposition, this happens on the level of implicatures. I.e. implicatures about the epistemic status of a proposition in the scope of *guuq* are derived on the basis of the contextual assumptions about the (reliability of) the source of information (i.e. the reporter in this case) in relation to the propositional content.

Further questions: How do we represent the semantics of a non-modal evidential like *guuq*? And how do we predict the varying epistemic status of the proposition in utterances with *guuq*? In Chapter 8 the analysis of *guuq* performed here will be used to sketch an account of the semantics and pragmatics of non-modal evidential expressions like *guuq*.

Free form

ahulu

Lowe (1984): ‘Maybe, probably’

Modal? The form *ahulu* appears to have an epistemic modal use and a non-modal use. On epistemic modal uses, the force is less than full.

Other findings: *Ahulu* can be used to modify a proposition with an epistemic modal meaning similar to English *probably*. *Ahulu* may also be used alone as a response or reaction to another person’s utterance, where it appears to express endorsement.

Future research: Future research on *ahulu* should explore the meaning and use of *ahulu* as a response word.

Postbases

niq

Lowe (1984): ‘Reported information; this suffix is used when the speaker is reporting something he has heard has happened or thinks has happened. It may have various translations in English, such as: apparently, I heard that ...’

Modal? No. *Niq* is restricted to full epistemic force, which, unlike modal meanings, is a *realized* force dynamic potential. *Niq* is nevertheless an epistemic expression, though not a *modal* epistemic expression.

Other findings: *Niq* is a mediative evidential expression in the sense of Lazard (2001) in that the use of *niq* evokes the idea of a piece of evidence, however without restricting the type of evidence.

Further questions: How do we represent the semantics of a non-modal evidential like *niq*, which captures its epistemic force properties as well as evidential properties? In Chapter 8 the analysis of *niq* performed here will be used to sketch an account of the semantics and pragmatics of non-modal evidential expressions like *niq*.

yumaaq

- Lowe (1984): ‘To be planning to, to intend to’
- Modal? Yes. *Yumaaq* restricts partial root force (roughly corresponding to ‘root necessity’).
- Other findings: It turns out that *yumaaq* is not limited to intention or volition, as indicated by Lowe’s (1984) description. *Yumaaq* may take inanimate subject referents and may be used to modify predications representing undesirable states of affairs. Those uses are not compatible with Lowe’s (ibid.) description, which is hence too restrictive. Rather, *yumaaq* is merely restricted to partial actualizational force from a *subject-internal* source.
- Future research: It remains to be settled whether *yumaaq* is indeed an Uummarmiutun expression, since some consultants indicate that they associate *yumaaq* with Siglitun rather than with Uummarmiutun.

viaq

- Lowe (1984): ‘Might (in the sense of potential consequence)’
- Modal? Yes. *Viaq* encodes neutral epistemic force (roughly corresponding to ‘epistemic possibility’) towards the truth of the proposition in the future.
- Other findings: There is not always a sense of ‘potential *consequence*’ involved in interpretations of sentences with *viaq*: *viaq* may also be used to express the assumption that the proposition may be true of the future based on available knowledge. Another finding is the tendency to associate *viaq* with apprehensional attitude towards the potential future truth of the proposition. This aspect is not encoded by *viaq*, since *viaq* may also take a proposition in its scope whose future truth is desirable. Given the collected data, the use of *viaq* appears suitable for conveying implicatures pertaining to apprehensional attitude and possibly to call for action in terms of mitigation or facilitation.
- Future research: *Viaq* appears especially frequent in constructions where *viaq* takes an apodosis sentence in its scope. Future research should seek to shed light on the interaction of *viaq* with conditional mood. Future research should also confirm that *viaq* is indeed restricted to neutral epistemic force, as there is one datum suggesting that the meaning of *viaq* may also cover partial epistemic force. Last but not least, future research on *viaq* should examine the various implicatures that seem to arise as part of interpretations of sentences with *viaq*.

yumiñaq

- Lowe (1984): ‘To be permissible, possible for one to; may, could’
- Modal? Yes. *Yumiñaq* may express neutral physical force (‘dynamic possibility’) in addition to neutral social force (‘deontic possibility’).
- Other findings: *Yumiñaq* appears to restrict the interpretation such that the modal source is identified.
- Future research: The collected data confirms that the meaning of *yumiñaq* covers subject-internal physical force, while it is not confirmed whether the meaning of *yumiñaq* also covers subject-external physical force. Cross-linguistic observations however makes it reasonable to expect that *yumiñaq* may indeed be used to express subject-external neutral physical force. This should nevertheless be confirmed by future research.

Postbases in focus of the present study:

řukřau

- Lowe (1984): ‘Must, has to.’
- Modal? Yes. *Řukřau* is restricted to partial social force (corresponding roughly to ‘deontic necessity’).
- Other findings: *Řukřau* may not be used to express epistemic modal meaning. It appears that *řukřau* is on a path towards developing other epistemic uses, namely hearsay evidential meaning.
- Further questions: How are the semantics and pragmatics of *řukřau* appropriately accounted for in a cognitively plausible model?
- In particular: how is the polyfunctionality of *řukřau* accounted for, now that *řukřau* may sometimes be used to express hearsay evidentiality in addition to social force?

hungnaq

- Lowe (1984): ‘Probably’
- Modal? Yes. The meaning of *hungnaq* covers neutral and partial epistemic force (corresponding roughly to ‘epistemic possibility’ and ‘epistemic necessity’) but not full epistemic force (i.e. full certainty). More precisely, *hungnaq* is restricted to less than full epistemic force.

Other findings: *Hungnaq* is appropriately spelled with *ng* instead of *k*. *Hungnaq* does not encode evidential restrictions.

Further questions: How are the semantics and pragmatics of *hungnaq* appropriately accounted for in a cognitively plausible model?

In particular: how is a restriction to epistemic meaning best represented, and what does a lexical semantics for a variable force modal look like on a cognitively plausible semantic and pragmatic account?

huk

Lowe (1984): ‘To want to’

Modal? Yes. *Huk* is restricted to partial actualizational force from a subject-internal source.

Other findings: This description predicts the volitional (‘bouletic’) interpretations present in Lowe (1984) and the data set, as well as the non-volitional interpretations in the data set, e.g. when *huk* occurs with inanimate subject referents.

The form *huk* also figures in verbal words where it contributes with the meaning ‘be in a state of’ or ‘feel’. Given MacLean’s (2014) description of the closely related North Slope Iñupiaq dialect, there is reason to believe that this is another postbase than the modal *huk*, as the two have slightly different phonological properties.

Further questions: How are the semantics and pragmatics of *huk* appropriately accounted for in a cognitively plausible model?

In particular: how can we predict the variation between desirability interpretations and interpretations relating to the general properties of the subject?

lla

Lowe (1984): ‘To be able to; can’

Modal? Yes. *Lla* is restricted to neutral physical force (‘dynamic possibility’).

Other findings: Utterances with *lla* may also be used to express neutral social force (‘deontic possibility’). *Lla* is nevertheless more closely associated with physical force. Utterances with *lla* may also be used to express neutral epistemic force via

implicatures. Epistemic meaning is not part of the encoded meaning given how *lla* patterns with *nngit* ‘negation’.

Further questions: How are the semantics and pragmatics of *lla* appropriately accounted for in a cognitively plausible model?

In particular: what should be reflected in a semantic proposal for *lla*, and how can the social force interpretations and the epistemic interpretations of utterances with *lla* be predicted?

Chapter 6:

Capturing the Semantics and Pragmatics of Modal Expressions

6.1 Introduction

The field of linguistic modal meaning is defined in Chapter 3 through the cognitive semantics notion of unrealized force-dynamic potential (Boye, 2005). This notion was found useful for understanding what modal meaning is and is not, and thereby useful for determining whether the meaning of a given linguistic item is modal or not. The cognitive semantic force-dynamic terminology was then used in Chapter 5 to describe modal meanings figuring in the interpretations, and hence to determine which modal concepts the meanings of the given expressions cover. The present chapter is concerned with questions pertaining to how the semantics of the individual Uummarmiutun modal expressions are appropriately represented and how to account for pragmatic interpretations. A good semantic proposal is one which together with pragmatic principles predicts the various interpretations an utterance with the given expression can be used to convey.

The chapter takes the necessary steps in finding and fine-tuning a model within which we can capture the semantics and pragmatics of the Uummarmiutun modal expressions under investigation, i.e. *hungnaq* ‘probably’, *řukřau* ‘should’, *huk* ‘inner force’ and *lla* ‘can’, and probably modal expressions in general. These semantic proposals are intended as hypotheses on how the meaning of the individual modal forms are stored in the mental lexicon which, in turn, form the basis for pragmatic interpretation. For this purpose, the relevance-theoretic framework

(see Wilson and Sperber, 1986/1995; Carston, 2002) will be operationalized in order to a) better address questions like lexical structure (Falkum, 2011, 2015) and especially in order to b) reflect the context sensitivity of modal forms (Papafragou, 2000). Relevance theory offers a fully-fledged cognitively plausible pragmatic theory with a clear division between semantics and pragmatics. The intention behind the application of relevance theory – which is primarily a theory of pragmatics – to the present endeavour of proposing semantic representations for Uumarmiumutun modals is outlined in §6.2. The section also explains the basic notions and theoretical distinctions offered by the relevance-theoretic framework as well as the theoretical concepts and tools relevant to the analyses of modal expressions.

With a few exceptions (e.g. Rahimian and Vahedi, 2010), existing relevance-theoretic approaches to modality are mainly concerned with English.¹⁶⁴ English modal auxiliaries tend to restrict modal force lexically, while the distinction between modal types – root and epistemic meaning – is context dependent. In other words, English modals – like modals in Indo-European languages of Europe in general – tend to display lexical ‘root-epistemic overlap’ (see Chapter 3, §3.2.2; van der Auwera and Ammann, 2013). Uumarmiumutun is, on the other hand, among the languages of the world¹⁶⁵ where modal *type* is lexically restricted and at least some modals vary between the traditional modal forces assumed to be lexically restricted by most Indo-European modals. It is thus not given that the semantic templates used to capture English modals in existing relevance-theoretic takes on modality are fit for capturing the semantic and pragmatic properties of the Uumarmiumutun modals in focus of the present study. Accounts of such non-overlapping modal expressions with variable force already exist within formal semantics and Gricean frameworks (e.g. Deal, 2011; Peterson, 2010; Matthewson, 2013). A relevance-theoretic account on how to handle the semantics and pragmatics of this type of modal expressions has, to my knowledge, so far not been proposed. Among the existing relevance-theoretic accounts of semantic and pragmatic properties of modal expressions, Papafragou (2000) offers the most promising

¹⁶⁴ The reader may be aware of Amfo’s (2005) relevance-theoretic account of the Akan expression *anka* in her paper with the title “Modal marking in Akan: the case of *anka*”. Amfo’s (2005) paper is not considered in the present study since *anka* falls outside a definition of modality as unrealized force-dynamic potential. Amfo proposes that the core meaning of *anka* “[...] is that the proposition expressed represents a state of affairs which is not real at the time of utterance [...]” (2005: 1010). *Anka* thereby seems to be an expression of full epistemic force towards ~p, i.e. the force-dynamic potential expressed by *anka* is realized, and *anka* thereby falls outside the definition of modality as unrealized force-dynamic potential.

¹⁶⁵ As mentioned throughout the thesis, other languages of this type are e.g. Gitksan (Matthewson, 2013) and Yupik (Reed et al. 1977).

model for capturing modal semantics and for cross-linguistic application, because it makes it possible to precisely reflect restrictions on modal type in the semantic proposal. §6.3.1 provides a brief overview of existing accounts of modal semantics and pragmatics in the relevance-theoretic literature followed by a discussion of modality in relation to the conceptual-procedural distinction in §6.3.2. Papafragou's (2000) account of modal semantics and pragmatics is presented in §6.3.3.

In spite of offering a promising model for cross-linguistic application, Papafragou (2000) does face some challenges in the encounter with Ummarmiutun modals. A few adjustments and elaborations therefore need to be made, before Papafragou's (2000) model can be applied to Ummarmiutun modals and successfully capture their semantics and pragmatics. §6.4 identifies the challenges and propose the necessary revisions of Papafragou's (2000) original account. As we shall see, some of the necessary revisions increase the descriptive clarity not only for Ummarmiutun modals, but for modals in general. Drawing on Boye's (2012a) work, §6.4.2 outlines a way of reflecting modal force in semantic proposals which appropriately reflects linguistic realities in addition to meeting the specific challenges posed by the Ummarmiutun modals. Appreciating that some modals – including Ummarmiutun modals (see Chapter 5, §5.3.1, §5.3.3 and §5.3.4) – are restricted to root modal meaning and the need to reflect this in a semantic proposal, §6.4.3 explores how this can be done within Papafragou's (2000) model. In §6.4.4 the lexical structure of modals is discussed. Papafragou (2000) proposes unitary semantics for the modals in her study, including those with root-epistemic overlap. As noted above, the Ummarmiutun modals under investigation do not display root-epistemic overlap. However, some of them may in the future conventionalize an epistemic meaning in addition to their root meaning (see Chapter 5, §5.3.1 and §5.3.4). The model used to phrase the semantics and pragmatics of these expressions in Ummarmiutun today should be designed in such a way that it can also be applied on those expressions if their encoded meaning should change in the future. Moreover, it is obviously desirable that a framework used to capture the semantics and pragmatics of modal expressions in one language is also applicable to modal expressions in other languages. Hence the framework developed here needs to capture modals with and without root-epistemic overlap. The section on modals and lexical structure proposes an alternative to the unitary descriptions and suggests that root-epistemic overlapping modals are rather cases of what I shall call 'split polysemy'. The section places the notion of split polysemy in relation to conceptions of polysemy in the linguistics literature with emphasis on Falkum's (2011, 2015) works, and argues that the split

polysemy account is better equipped than a unitary account for capturing linguistic realities pertaining to at least some root-epistemic overlapping expressions.

§6.5 sums up the chapter and the revised version of Papafragou's (2000) model before it is applied in Chapter 7 in the account of the semantics and pragmatics of the Uumarmiutun modals *hungnaq*, *ruk̄fau*, *lla* and *huk*.

6.2 Relevance theory

6.2.1 Why relevance theory?

Relevance theory – henceforth RT – is a cognitive theory about overt ostensive communication and it provides tools for detailed and cognitively plausible analyses of linguistic meaning and utterance interpretation. It was developed by Deirdre Wilson and Dan Sperber and first presented in its full form in 1986, later revised in 1995 (see Sperber and Wilson 1986/1995) and further developed by Robyn Carston (2002) among others. As a theory of communication, RT strictly speaking belongs to the sub-discipline of pragmatics, but the scope of RT's explanatory and descriptive powers may indeed be extended to semantics. This should come as no surprise, as it is hard to discuss pragmatics without a notion of semantics whatever that notion might be. The other way around, it is also difficult to discuss the stable conventionally encoded meaning of a linguistic expression without consideration of how this expression contributes to the utterance interpretation in various ways in different contexts. Most linguists agree that some aspects of word meaning are context dependent. The use of the pronoun *I* in an utterance pick out different referents depending on who the speaker is, and the form *sunshine* can be used to describe the sunshine produced by the sun as well as to describe loved ones, e.g. as in *He is the sunshine of my life*. Also modal expressions can be used to express a variety of meanings (recall Chapter 3, §3.1.2). The context dependence of linguistic expressions is accounted for in various ways in the linguistics literature, e.g. through different ways of modeling context dependence in the semantics (e.g. Kratzer's (1981, 2012) 'conversational backgrounds') or by pragmatic accounts. In the present thesis, the formation of semantic proposals is informed by awareness of pragmatic principles to account for the contextual variation among interpretations of modal expressions. Proposing semantic descriptions of

Ummarmiutun modal expressions therefore requires a good pragmatic framework. Such framework allows us to determine which meaning aspects constitute the encoded meaning of the given expression on the one hand, and which interpretations of utterances containing that expression are best accounted for as results of interaction between the encoded meaning and the linguistic and non-linguistic context on the other. Doing so requires a clear distinction between semantics and pragmatics as well as a good theory of pragmatics. An important aspect of involving a pragmatic theory in the present study is to understand not only *that* pragmatics play a role in the interpretation of modals, but also *which* and *how* various pragmatic processes are involved.

Contributions to the RT literature include not only accounts of pragmatic phenomena such as implicatures, irony (Sperber and Wilson, 1986/1995; Wilson and Sperber, 1992, 2012), metaphor and conceptual adjustment (Carston, 2002, 2010; Falkum, 2011). Scholars working within RT have for a long time been concerned with, and contributed to, the understanding of the semantics-pragmatics interface (Carston, 2002, 2006, 2008). RT is therefore likely to offer an understanding of how different modal expressions divide the labour between semantics and pragmatics. This is one of the main reasons why RT is chosen to shed light on the modal expressions in the present study; all accounts of modals acknowledge that the meanings of these expressions vary according to the context, and it follows that the analysis of a modal presupposes awareness of its pragmatic as well as its semantic properties. RT offers the necessary tools for determining which meanings are part of the (conventionally) encoded meaning of an expression, and which parts of the interpretation of a given utterance can be predicted on the basis of the encoded meaning and pragmatic principles.

6.2.2 The relevance-theoretic account of communication and utterance interpretation

Like in Gricean pragmatic theories (see Grice, 1975), sentence meaning within RT is viewed as a vehicle for conveying the speaker's meaning. This meaning does not merely correspond to the decoded linguistic meaning – it needs to be inferred on the basis of sentence meaning plus contextual information (Sperber and Wilson, 1986/1995). Gricean pragmatics and RT alike point out certain dynamics which serve to explain how and why communicative interaction works. In the

Gricean tradition, these dynamics are understood as the cooperative principle and conversational maxims. Where the Gricean tradition draws on rational principles in the explanation of utterance interpretation and why communication works, RT draws on human cognitive capacities. In RT, utterance interpretation is a relevance guided process, and ‘relevance’ is a property of inputs to cognitive processes:

(6.1) Relevance of an input to an individual

- a. Other things being equal, the greater the positive cognitive effects achieved by processing an input, the greater the relevance of the input to the individual at that time.
- b. Other things being equal, the greater the processing effort expended, the lower the relevance of the input to the individual at that time.

(Wilson and Sperber, 2004: 609, see also Sperber and Wilson, 1995: 265)

The utterance – or rather, an *interpretation* of the utterance in a given context – is relevant to an individual when it yields positive cognitive effects without requiring her to spend too much processing effort. For the sake of clarity: the ‘relevance’ of an utterance is not to be understood as the information being genuinely interesting or important to the hearer. It is of course perfectly possible to understand an utterance without finding the information interesting or important. An utterance is relevant in the technical sense of the term when a relevant interpretation is achieved, i.e. when communication is successful in the sense that the utterance is understood. An interpretation yields cognitive effects when it interacts with the hearer’s existing ‘cognitive environment’ either by supporting and strengthening her existing assumptions, by contradicting and eliminating existing assumptions, or by combining inferentially with existing assumptions to yield new conclusions (Sperber and Wilson, 1986/1995).¹⁶⁶

¹⁶⁶ It is of course perfectly possible to process and understand an utterance without necessarily believing the truth of the intended interpretation. Understanding an utterance means to recover what the speaker intends to communicate with that utterance, i.e. the assumptions the speaker intends you to entertain and endorse. For instance, a speaker may utter *Unicorns exist*. You happen to know that this is not true, and thus ‘unicorns do *not* exist’ is part of your existing cognitive environment. The speaker knows that you hold this assumption, and she intends her utterance to yield cognitive effects by contradicting this existing assumption of yours. You may indeed recognize her intention to convey the assumption as well as how she intends her utterance to yield cognitive effects (namely by contradiction a belief in your cognitive environment). All this can be recognized without you endorsing the truth of the statement and without you changing your cognitive environment. You have nevertheless processed and interpreted the utterance in that you have recovered what the speaker intended to convey. That you do not believe the assumption she intended to convey is obviously not part of her intention with the utterance and hence not a part of ostensive communication and not a part of the utterance’s pragmatics. Similar points can be made about lying and understanding. It is of course possible to interpret an utterance whose content is a lie, as long as the hearer recognizes what the speaker intends to convey by means of that utterance. The intention of lying is nevertheless not part of ostensive communication and not a part of

As explained in the principles of relevance below, humans are geared towards maximization of relevance, and by producing an utterance, the speaker – simply put – creates the expectation that the interpretation of this utterance will be relevant to the addressee:

(6.2) Principles of relevance

a. The cognitive principle of relevance:

Human cognition tends to be geared to the maximisation of relevance (Sperber and Wilson, 1986/1995: 260).

b. The communicative principle of relevance:

Every act of ostensive communication communicates a presumption of its own optimal relevance” (Sperber and Wilson, 1986/1995: 260).

The cognitive principle of relevance predicts that humans are geared towards the achievement of as many cognitive effects as possible in return for as little processing effort as possible (Sperber and Wilson, 1986/1995: 123-5). This means that in a communication situation, the addressee is geared towards obtaining as many positive cognitive effects as possible without having to go through an unjustifiable range of far-fetched inference paths (the cognitive principle of relevance). And the speaker phrases her utterance such that the hearer can access the intended interpretation (i.e. an interpretation yielding sufficient positive cognitive effects) without going through far-fetched inference paths, i.e. such that the interpretation of the utterance will be worth the processing effort (the communicative principle of relevance) (Sperber and Wilson, 1986/1995: 267).

The assumptions accessed in order to interpret the utterance are called ‘contextual assumptions’ in RT, and as a whole they are referred to as the ‘context’. The context is a psychological construct. It consists of a *subset* of the hearer’s assumptions about the world, drawn from a) the preceding linguistic context, b) assumptions derived from the observation of the physical environment and c) encyclopaedic knowledge, memories and beliefs (Sperber and Wilson, 1986/1995). The selection of context is guided by the communicative principle of relevance. Given that humans are geared towards optimal relevance, they cannot be expected to keep processing when their expectations of relevance have been met. Any processing beyond an interpretation that

the utterance’s pragmatics. A lying speaker obviously does not want the interlocutor to know that she is lying, or the attempt to deceive would fail.

yields sufficient cognitive effects in return of justifiable mental effort is more costly than stopping at the interpretation that satisfies the expectations of relevance. The speaker is, as Carston (2002: 45) puts it, “[...] *expected to have found a vehicle for the communication of her thoughts which minimizes the hearer’s effort (within the parameters set by the speaker’s own abilities and goals/preferences)*”. Let us work through an example.

If for instance A and B are waiting for their friend C, and A utters *Ah, finally, there she is*, then the most easily accessible referent for the expression *she* is C. Even if A and B have spent their time waiting for C talking about their other friend D, the most relevant referent is still C, even though D is arguably also in focus of their attention, given that D has been the topic of their conversation (see Gundel et al. 1993, for the argument that *she* restricts the referent assignment to individuals in focus of attention). It is mutually manifest to A and B that they are waiting for C, and A introduces his utterance with *Ah, finally*. If A had intended to refer to their other friend D by means of the expression *she*, this would have required B to access assumptions, which are far-fetched in the given context. B would have to assume that A is also waiting for D, and given that A has given B no reason to entertain this belief, B would have to accommodate this assumption. This interpretation route would be far more costly than assuming that A intends to refer to C, which is consistent with an interpretation that yields sufficient positive cognitive effects. Since speakers who are aiming at optimal relevance – and intend their addressee to access their informative intention – A would not make use of the expression *she* to refer to D in a context where C is much more easily accessible. Any interpretation where another referent than C is assigned to *she* would require B to process A’s utterance beyond the immediately available interpretation where *she* refers to C. Following the communicative principle of relevance, the comprehension strategy (expected by speakers) to be employed by addressees looks as follows:

(6.3) Relevance-theoretic comprehension strategy:

- (a) construct interpretations in order of accessibility (i.e. follow a path of least effort);
- (b) stop when your expectation of relevance is satisfied. (Sperber and Wilson, 1986/1995: 130-1; Carston, 2002: 380)

The principles presented above explain how inferring informative intentions may be possible, and in effect how communication may be possible. The cognitive principle of relevance

explains that humans are oriented towards gaining understanding from inputs without resort to speculations and far-fetched assumptions, unless these will result in better understanding. The communicative principle of relevance explains that ostensive communication creates an expectation that the effort spent on interpreting it will result in understanding. That is, when a person utters an utterance, she thereby communicates to the hearer that it is possible for him to understand this utterance, i.e. to arrive at the interpretation the speaker intended to convey, if he decodes the linguistic material and makes use of the contextual information available to him. In other words, producing an utterance intended for communication means producing an utterance that the speaker assumes can be processed by the addressee such that the addressee will arrive at the intended interpretation. Given that human cognition works this way, a speaker can expect from her hearers that they will make use of the contextual information that they know that she knows is available to them. This is why communicating individuals usually do not end up with far-fetched interpretations that do not match the informative intention.

Among other things, communicators exploit mutual awareness of how their cognitive environments intersect when they phrase and interpret utterances. That is, the set of mutually manifest assumptions are easily accessible in the formation of a suitable context for interpretation of an utterance (see Sperber and Wilson, 1986/1995: 38-46). Any assumption that an individual is capable of representing mentally and accepting as true or probably true is manifest to him. Assumptions may become manifest to an individual through perception, e.g. the sight of a bird on your porch makes it manifest for me that there is a bird on your porch. An assumption is also manifest to an individual if it is derivable from her memory (*ibid.*). Blass (2000) renders Sperber and Wilson's (1986/1995) example to illustrate this: “[..] *it may be manifest to me that Julius Caesar and Noam Chomsky never had breakfast with each other. Even though I had never considered this before, this conclusion is manifest because of the assumptions that I have about Caesar and Chomsky.*” (Blass, 2000: 44). An assumption A is *mutually* manifest to two individuals if they are *both* capable of accessing this assumption through memory, perception or inference *and* they are aware of this mutual access to A. In other words; A is a member of the set of assumptions constituting the intersection of the two individuals' respective cognitive environments, and this intersection is a *mutual* cognitive environment to the extent that the two individuals are aware of this overlap between their respective cognitive environments (Sperber and Wilson, 1986/1995: 38-46).

6.2.3 Relevance-theoretic concepts and distinctions

6.2.3.1 The semantics-pragmatics distinction

The RT distinction between semantics and pragmatics is understood as a distinction between linguistically encoded context invariant meaning on the one hand, and inferred speaker meaning on the other. In short, the semantics-pragmatic distinction is understood as the distinction between code and inference (Sperber and Wilson 1986/1995: 172-173; Carston, 2006, 2008). Semantics as the linguistic code is one of several constraints on the inferential relevance-oriented processes – i.e. the pragmatic processes – which lead to speaker meaning (Ariel, 2008). This sharp distinction between semantics and pragmatics facilitates the formation of precise semantic proposals for modal expressions. It guides the formation of the semantic proposal by requiring a clear indication of which parts of an interpretation of an utterance containing that modal are due to the encoded restrictions on the one hand, and which parts are results of this encoded meaning in interaction with pragmatic principles on the other. In this sense, a semantic proposal is appropriate if the context-specific interpretations of a modal expression can be predicted on the basis of the proposed encoded meaning plus pragmatic principles.

When analyzing an utterance, relevance theorists distinguish at least four levels: logical form, basic explicature, higher-level explicature and implicature. The logical form is the result of decoding linguistic expressions in the sentence, and hence the domain of semantics (Sperber and Wilson 1986/1995).¹⁶⁷ The logical form is not what is communicated. Rather, the logical form can be seen as a blueprint which underdetermines the meaning of the utterance. The logical form of Mary's utterance in (6.4) is given in (6.4'):

(6.4) Peter: Did John pay back the money he owed you?

Mary: He forgot to go to the bank.

(6.4') Logical form: He_x forgot_{-time-t} to go to the BANK1 / BANK2

[He_x = individual perceived as masculine, in focus]

¹⁶⁷ For the sake of clarity: it is not the case that the domain of semantics is limited to the logical form. Some procedural expressions do not encode meaning which contributes to the construction of the logical form, but they nevertheless encode meaning and thereby lend themselves to semantic analysis.

[forgot = forget+PAST]
[to go to = move to goal]
[the = familiar N]
[BANK1 = financial institution]
[BANK2 = river bank] (adapted from Wilson and Sperber, 2004)

How to represent the logical form is an open question (see Carston, 2002: 9-60), and since the present thesis is not concerned with proposing a semantics for any of the linguistic items in (6.4), I shall not go deeper into a discussion of exactly what they encode. The point here is that the logical form is encoded linguistic meaning, i.e. it consists of the meaning properties the given linguistic expressions always bring to the interpretation process when they occur in an utterance. The logical form is never the intended interpretation of the utterance; linguistic (encoded) meaning highly underdetermines speaker meaning (e.g. Carston, 2002). The decoding of the linguistic expressions does not even result in a proposition. Unless it is fleshed out, it is hard to determine whether a logical form, e.g. as the one in (6.4'), is true or false. This is related to the fact that it is hard to access a representation of a state of affairs based on Mary's words alone, because they do not come with in-built information on e.g. who *he* refers to or location in time. What plays a role cognitively speaking, according to RT, is not encoded meaning but rather propositions.

6.2.3.2 Explicatures and implicatures

Propositions may be expressed or communicated as basic explicatures, higher-level explicatures, and implicatures. Following Sperber and Wilson (1986/1995), Carston (2002) defines these three levels of interpretation as follows:

(6.5)

- a. [basic] Explicature:
An ostensively communicated assumption which is inferentially developed from one of the incomplete conceptual representations (logical forms) encoded by the utterance.

- b. Higher-level explicature:
A particular kind of explicature (see above) which involves embedding the propositional form of the utterance or one of its constituent propositional forms under a higher-level description such as a speech-act description, a propositional attitude description or some other comment on the embedded proposition.
- c. Implicature (conversational):
An ostensibly communicated assumption which is not an explicature; that is, a communicated assumption which is derived solely via processes of pragmatic inference. An alternative characterization: a contextual assumption or contextual implication intended (communicated) by the speaker; hence an implicature is either an implicated premise or an implicated conclusion (Carston, 2002: 377).

Explicatures come as basic-explicatures or higher-level explicatures. Basic-explicatures and higher-level explicatures are not notionally different; they are both developments of the logical form, and they differ only in the amount of development of the logical form. Explicatures are different from implicatures in that they are interpretations accessed through development of the linguistic content of the utterance, while implicatures are derived through inferences based on explicatures and contextual information. Whereas Grice (e.g. 1975) distinguished between different types of implicatures, implicatures in RT are by default conversational, because they are interpretations communicated through the interaction between the explicature and contextual assumptions. What Grice called ‘conventional implicatures’ would be analyzed as encoded meaning in RT, since they are conventionally linked to the given linguistic expression or construction type and hence part of the linguistic code (Blakemore, 1987; Wilson and Sperber, 1993).¹⁶⁸ Recall from Chapter 3 that modal meaning can be communicated on the level of implicature, but an expression can obviously not be said to encode modal meaning just because it happens to occur in an utterance in a context where the implicatures contain modal meaning (see §3.2.1). However, throughout the RT literature, the meaning of some linguistic expressions are analyzed as encoding procedural restrictions on the construction of implicatures (Blakemore, 1987). It is arguably possible that a linguistic expression can encode meaning which restricts the construction of implicatures such that they include modal meaning. Such an expression would be

¹⁶⁸ This is part of how RT offers a clear division between semantics and pragmatics, because it clearly defines semantics as the mapping between form and the conventions stored in the mental lexicon along with this form. As for the notion of explicature, this category does not figure in Grice’s framework at all, as his notion ‘what is said’ is a narrower category than explicature.

appropriately classified as a modal expression even though it affects the implicatures rather than the explicature. This is so, because it is a case of *encoded* modal meaning, as long as it conventionally contributes to the utterance interpretation with the instruction to construct implicatures with a notion of unrealized force-dynamic potential. The identification of a modal expression comes down to whether or not the expression in question conventionally constrains the interpretation of utterances in which it occurs such that they include a notion of unrealized force-dynamic potential.¹⁶⁹

Let us return to example (6.4) above and employ the introduced theoretical concepts in turn. A possible basic explicature of Mary's utterance in (6.4) is represented in (6.6):

(6.6) Peter: Did John pay back the money he owed you?

Mary: He forgot to go to the bank.

Basic-explicature of Mary's utterance:

John_i forgot to move physically to the financial institution at time_t.

(adapted from Wilson and Sperber, 2004)¹⁷⁰

The basic explicature of the utterance roughly overlaps with the proposition expressed by the utterance, as both have the property of being the truth-conditional content of the utterance.¹⁷¹ The two notions differ in that an explicature is an *interpretation* of an utterance, whereas the term proposition in the linguistics literature is not limited to interpretations and communicated content. The proposition expressed by the utterance may be ostensively communicated and hence an explicature, or it may be merely expressed. In the latter case, it is merely a vehicle for deriving the assumptions ostensively communicated by the utterance (Carston, 2002: 379). The explicature is constructed based on the encoded meaning, and hence a development of the logical form interacting with contextual assumptions guided by the principles of relevance.

Disambiguation, conceptual adjustment, temporal resolution, supplying unarticulated constituents and reference assignment are among the activities performed in the derivation of an

¹⁶⁹ See §6.3.2 for a discussion of modal meaning and the conceptual-procedural distinction.

¹⁷⁰ The utterance used in the example provided here is slightly different from the utterance under analysis in Sperber and Wilson (2004) which is *No. He forgot to go to the bank.*

¹⁷¹ Some utterances, e.g. utterances of sentences in the imperative or interrogative mood, do not have basic explicatures. Such cases are addressed below along with the brief outline of the notion of higher-level explicature.

explicature. To retrieve the basic-explicature of Mary's utterance in (6.4), Peter needs to assign the referent 'John' to the expression *he*. Peter also needs to disambiguate the homonymous expression *bank* and locate the situation at some point in time prior to the utterance. These processes are constrained by the linguistic code, e.g. the referent of *he* will have to be a masculine-presenting individual who is in focus of attention (see Gundel et al. 1993), and *bank* either refers to a river bank or a financial institution. The assumption that Mary intends to refer to a financial institution is very easily accessible to the two adult conversants, because the concept of money has been evoked in the previous utterance. Mary could indeed succeed in referring to a river bank with the expression *bank* in (6.4) if it is mutually manifest to Peter and her e.g. that John has money buried in the sand by a river bank. Given that Mary is interested in getting her informative intention through, she phrases her utterance according to her hypothesis about what knowledge Peter has available, and which knowledge is easily available for him to draw on in the interpretation process. If Mary intends the expression *bank* to refer to a river bank, then there must be a mutually manifest assumption available about John storing money on a bank by a river. Otherwise, Peter will not be able to arrive at Mary's intended interpretation, and she will not have succeeded in getting her informative intention across to Peter. As for conceptual adjustment, this amounts to finding out which ad hoc concept a given expression is intended to pick out (Sperber and Wilson, 1997; Carston, 2002). An ad hoc concept is the specific concept picked out by a given linguistic item in a specific utterance. *Go* is highly polysemous, in that it can be used to talk about physical movement as well as movement of abstract entities (e.g. the proceeding of aspects of somebody's life) as in utterances like *How's it going?* and *He's going crazy*. In RT, encoded concepts are adjusted in accordance with the principle of relevance. In (6.4), the vague concept GO is adjusted into the ad hoc concept *GO-MOVEMENT.¹⁷²

The polyfunctionality of the form *bank* is different from the polyfunctionality of the form *go*, and hence the processes involved in their interpretations are analyzed as disambiguation and conceptual adjustment respectively. The hearer interpreting an utterance with *bank* will have to choose between two distinct meanings, namely 'river bank' and 'money institution'. The form *bank* is part of two individual lexical items; one where the form is associated with the river-meaning and

¹⁷² In recent RT research (Wilson, 2011, 2016; Carston, 2016a), however, it is suggested that conceptual adjustment is rather a type of procedure. I shall not go into this discussion here.

one where the form is associated with the financial institution-meaning. That *bank* is homonymous is probably uncontroversial in existing theories of linguistic meaning. Likewise, it should be uncontroversial that there is a closer relation among the various senses that *go* can be used to express, than among the financial institution sense and the river bank sense that *bank* can be used to express. *Go* is hence polysemous in the sense that it has one lexical entry associated with several meanings. On RT accounts of polysemy (e.g. Falkum, 2011, 2015) the meanings conveyable by a polysemous item are not stored as a list or generated from lexical rules. Rather, they are accessed as a result of narrowing or broadening of the (vague) encoded concept. Linguistic meaning is assumed to be plastic, which means that it in theory can be adjusted into any ad hoc concept consistent with the relevance guided interaction between the encoded (vague) concept and contextually accessible assumptions. As Falkum puts it, “[l]exical interpretation involves taking the encoded concept and its associated encyclopaedic information, together with a set of contextual assumptions, as input to the inferential process of constructing a hypothesis about the speaker’s intended meaning” (2015: 90). A mentally represented concept is seen as an address in memory associated with different kinds of information, e.g. information about the syntactic and phonological properties of the form encoding that concept, and encyclopaedic information about the denotation of the concept including culture-specific information and sensory-perceptual representations etc. (see Falkum 2015; Sperber and Wilson, 1986/1995). Falkum (2015: 90) gives *book* as an example. The concept BOOK denoted by *book* may give access to assumptions like ‘Books can be read’, ‘Books are physical objects’, ‘Books are often entertaining’, ‘Books can be intellectually challenging’ etc. When a hearer interprets the form *book*, she makes use of the subset of (mutually manifest) encyclopaedic information plus contextually available assumptions to construct a hypothesis about the ad hoc concept the speaker intends to make manifest to her through his use of the form *book*. The relevance-theoretic take on the lexical structure of polyfunctional items is further outlined in §6.4.4.2-3 in the discussion of the semantic representation of root-epistemic overlapping modals with a special emphasis on Falkum’s (2011, 2015) recent works.

The most relevant interpretation of an utterance is sometimes its higher-level explicature or its implicature. This means that sometimes the assumption communicated as a higher-level explicature or as an implicature yields more cognitive effects than the basic-explicature and hence is the interpretation that the speaker intended to communicate with her utterance. Provided that

Mary succeeds in communicating (6.7) by means of her utterance in (6.4) in the given context, (6.7) is an implicature of Mary's utterance:

(6.7) John has not paid back the money he owes Mary (because he forgot to go to the bank)

If Peter assumes that Mary's utterance 'He forgot to go to the bank' will be optimally relevant to him, he will process the linguistic code and look for an interpretation that yields cognitive effects by means of combining the linguistic code with contextual assumptions easily accessible to him. Peter will justifiably look for an interpretation of Mary's utterance which pertains to the question he just asked, but it is hard to see how the basic explicature of Mary's utterance in and of itself can be expected to yield such cognitive effects for Peter. And indeed, sometimes the communicative goal – i.e. the most relevant interpretation – of an utterance is not merely to convey the state of affairs represented by the proposition constituting the basic explicature. Peter assumes that Mary intends her utterance to be worth his processing effort, i.e. that its interpretation will yield sufficient cognitive effects given the mental effort he invests. Peter therefore interprets the information that John forgot to go to the bank in connection with the question he just asked. This requires access to assumptions about banks and money and John, e.g. that John going to the bank would be a prerequisite for obtaining the cash, and now that he has not obtained the cash, he cannot have given it to Mary. Such inferential processes may lead to the implicature in (6.7).¹⁷³ Recall that while explicatures are direct developments of the logical form, the derivation of implicatures is based on the explicature plus contextual assumptions. As can be seen if we compare the implicature in (6.7) with the logical form of Mary's utterance [He_x forgot_{-time-t} to go to the BANK1 / BANK2], it is evident that the implicature contains representations which cannot be traced directly to the linguistic material in Mary's utterance. Mary's utterance has indeed yielded an interpretation

¹⁷³ RT does not assume that an interpretation process is necessarily linear such that the hearer first assigns reference and disambiguates to form a basic explicature, and then goes on to access contextual assumptions about banks and money and then finally derives the implicature. The processes connected to the various levels of meaning are rather interdependent (Wilson and Sperber, 2004: 615). For example, the disambiguation of the expression *bank* is obviously guided by the mutually manifest assumption that money and 'financial institution'-banks have something to do with each other. And this mutually manifest assumption is again used to derive inferences from the basic explicature such that John forgetting to go to the financial institution is seen as having an impact on whether he was able to pay back the money. It is therefore impossible to say whether it is the disambiguation of *bank* which aids the derivation of the implicature, or whether it is the derivation of the implicature which aids the disambiguation of *bank*. The point is that all these processes are interconnected, context dependent and guided by the aim for optimal relevance, but not sequentially constrained.

containing concepts of PAY, MONEY and OWE, but this should obviously not lead to the hypothesis that any of the linguistic items in her utterance necessarily encodes any of these meanings. The concepts figuring in the explicature of her utterance are, on the other hand, more directly traceable to the linguistic items constituting the utterance.

As mentioned above, the most relevant assumption communicated by an utterance may also be its higher-level explicature. The definition is repeated here for convenience:

(6.5b) Higher-level explicature:

A particular kind of explicature (see above) which involves embedding the propositional form of the utterance or one of its constituent propositional forms under a higher-level description such as a speech-act description, a propositional attitude description or some other comment on the embedded proposition (Carston, 2002: 377).

Consider the example in (6.8), which is from Wilson and Sperber (2004):

- (6.8)** a. Peter: Will you pay back the money by Tuesday?
b. Mary: I will pay it back by then.

Higher-level explicature of Mary's utterance:

Mary promises that [Mary will pay back the money by Tuesday]

Higher-level explicatures embed the propositional form in a higher-level description. Given the mutually manifest assumptions easily available from Peter's utterance, it is reasonable to assume that Mary intends the propositional content of her utterance to be entertained as a promise. If the proposition had represented a state of affairs which was unattractive to the hearer, the higher-level explicature would likely have been a threat or a warning about the proposition expressed. In the RT literature, higher-level explicatures and basic explicatures are often referred to collectively as explicatures, since they both result from a direct development of the linguistic form. While explicatures indeed are derived through pragmatic processes and quite a lot of the information in them may be implicitly communicated, it is still worthwhile to describe them as explicit and to distinguish them from implicatures. As shown above, implicatures may have little or no overlap with the encoded meaning of the linguistic items in the utterance, as they are the results of reasoning based on the *information* provided by the explicature in relation to the context. The postulated higher-level explicature of (6.8b) 'Mary promises [Mary will pay back the money by Tuesday]'

should not be mistaken for an implicature, just because there is no clear ‘promise’-aspect in the linguistic code of the utterance. Clearly, it is a development of the logical form in that it actually contains the basic explicature ‘Mary will pay back the money by Tuesday’ which is a direct development of the logical form (see also Sperber and Wilson, 1986/1995: 181).

6.2.3.3 Propositions communicated vs. propositions expressed

RT draws a distinction between propositions communicated and propositions expressed. Peter’s and Mary’s utterances in (6.8) both express the same proposition, namely ‘Mary will pay back the money by Tuesday’. However, while Mary’s utterance communicates this proposition as a true description of the future world, Peter’s utterance merely *expresses* this proposition (Sperber and Wilson, 1986/1995). The use of linguistic markers of interrogative mood in Peter’s utterance shows that the proposition he expresses is not intended as an interpretation of what the future world is like. Rather, he asks whether this proposition is a correct interpretation of the future world. His use of interrogative mood marking shows the hearer that it is a higher-level explicature of the shape ‘speaker asks p’ that is the intended interpretation of the utterance, and not p as a description of the world. Also utterances with imperative mood marking express propositions rather than communicate them. Imperative sentences are truth-conditional representations of states of affairs regarded as potential and desirable (Wilson and Sperber, 1998; Sperber and Wilson, 1986/1995: 227). That propositions are involved in utterances of imperative constructions at all is contrary to views within Cognitive Linguistics and Functional Grammar where such utterances express states of affairs, because the content cannot be assigned a truth-value or, as Boye (2012a) puts it, evokes a process construed as non-referring.

Also root modal meanings are analyzed within Cognitive and Functional linguistics as taking states of affairs rather than propositions in their scope. Epistemic modal meanings, on the other hand, are analyzed as taking propositions in their scope, according to Boye (2005). As the reader will note, the present thesis maintains – in accordance with RT – that root modal meanings as well as epistemic modal meanings scope over propositional representations. In order to give a better understanding of why root as well as epistemic meanings scope over propositional representations, I shall briefly explain what is meant by a propositional representation in RT

through an explication of how RT analyzes utterances of imperative constructions. The point here is not to dispute the employment of the notion of states of affairs *within Cognitive and Functional Linguistics*. Nevertheless, within RT, which is the framework employed in the present account of the semantics and pragmatics of modal expressions, propositional representations are involved in a) interpretations of utterances with imperative marking and b) interpretations of utterances with root modal expressions, just like they are involved in interpretations of utterances with epistemic modal expressions. The remainder of the present sub-section explains how and why this is so.

In RT, a representation does not have to be concerned with truth-values in order to be a propositional representation. Utterances of imperative constructions express propositions, because they present a set of truth-conditions. Take an utterance of *Give me my money back!* The interlocutor constructs a representation of ‘ I_i give speaker- j her- j money- k back at time- t ’, and entertains this as desirable, requested and/or commanded by the speaker. Note that the representation ‘ I_i give speaker- j her- j money- k back at time- t ’ contains time and reference assignment. To interpret the utterance, the interlocutor needs to access assumptions about an approximate location in time and space in order to interpret the utterance, and he also needs to assign reference to the individuals involved. During the interpretation process, he thereby accesses a truth-conditional representation. Within RT, ‘ I_i give speaker- j her- j money- k back at time- t ’ is therefore analyzed as a propositional representation. It is obvious that the proposition expressed by an utterance with imperative mood marking does not have a truth-value, and the intention behind the utterance of an imperative sentence is obviously not to convey assumptions pertaining to the proposition’s epistemic status or truth-value. The point is that in order to interpret the utterance, the interlocutor accesses a mental representation of a set of truth-conditions. As a speaker of the language, he knows what a world looks like if this representation is a description that applies to that world, i.e. he knows which conditions would be obtained if the proposition is true. It therefore makes sense to view the representation as a set of truth-conditions and hence a propositional representation. In short, the proposition involved in an utterance of an imperative construction is a truth-conditional representation which is not communicated by the speaker as a description of the world, but rather expressed and presented as a description of a desirable world (see also Sperber and Wilson, 1986/1995: 225-227, 232).

In a similar fashion, the representation over which a root modal meaning scopes is also propositional. Take the utterance of the sentence *Bob must eat*. The interpretation of this utterance

does not involve assumptions about the truth-value of ‘Bob eat at time- t ’, but it does require the speaker to access a representation of a set of truth-conditions. This includes the decoding of *eat* and *Bob*, including a reference assignment to *Bob*, and an approximate location in time and space. As a speaker of the language, the interlocutor knows what the world has to look like in order for the description ‘Bob- i eat at time- t ’ to apply to that world. Thus we get a propositional representation over which the modal *must* scopes. As we shall see in §6.3.3.2, RT does indeed offer analytical tools which allow us to acknowledge the important difference between the representation in the scope of a root modal expression on the one hand, and the representation in the scope of an epistemic modal expression on the other: both are propositional representations, but they differ in how the proposition is used and entertained.

6.3 Relevance-theoretic modal semantics and pragmatics

6.3.1. A brief overview of relevance-theoretic takes on modal meaning

Many relevance-theoretic works mention or discuss modal meaning. Among these are Klinge, (1993), Groefsema (1995), Nicolle (1996), Papafragou (2000), Kisielewska-Krysiuk (2008), de Saussure (2011) and Wilson (2012). However, only a few of these works are devoted to the discussion of how to capture and describe the semantics and pragmatics of individual modal expressions. One of the first relevance-theoretic accounts of modals is Groefsema’s (1995) paper on *can*, *may*, *must* and *should*. While Groefsema’s (ibid.) model captures intuitive differences among the modal forces of English *can*, *may*, *must* and *should*, it does not offer any options for accurate descriptions of lexical restrictions on modal types. That is, it is not clear how the model would capture specifications of restrictions to root or epistemic modal meaning. This is not necessarily a problem to the semantic representation of the majority of the English modals, as most of these display lexical root-epistemic overlap. Nevertheless, as pointed out throughout the thesis, several languages of the world, including Uumarmiutun, have modal expressions which are lexically restricted to epistemic meaning, root meaning or a specific type of root meaning. The lack of a way to specify restrictions on modal type in Groefsema’s (1995) model therefore complicates its application in the analyses of modals in several languages of the world, including

Uummarmiutun. The same problem applies to Klinge's (1993) account; Klinge (1993) proposes a model, which appears suitable for capturing English modals, but the lack of an obvious way to integrate restrictions on modal type poses a problem for the applicability to modals in a language like Uummarmiutun. Kisielewska-Krysiuk's (2008) paper offers a detailed account of how *may* and *must* are interpreted in context. As in Groefsema (1995) and Klinge (1993), the object of study in Kisielewska-Krysiuk's (2008) paper is root-epistemic overlapping modals, and – as in Groefsema (1995) and Klinge (1993) – it is not clear how non-overlapping modals would be handled in Kisielewska-Krysiuk's (2008) model. Moreover, Kisielewska-Krysiuk's (2008: 53) employment of the Gricean notion of 'conventional implication' blurs the distinction between code and inference, because it is not clear whether the implicated 'attitude of desirability', which Kisielewska-Krysiuk (2008) claims to be *conventionally* implicated by *must*, is to be understood as part of the semantics of *must*.

Like most relevance-theoretic accounts of the semantics and pragmatics of modal expressions, also Papafragou (2000) is concerned with English modals. However, Papafragou's (2000) semantic proposals for English modals all include a slot for specifying modal type understood as a restriction on what kind of domain of propositions the given modal expression permits. She puts forward the assumption that in cross-linguistic studies, "[...] *individual modal expressions will come out as permitting different kinds of domains of propositions as restrictors*." (Papafragou, 2000: 42). In addition to reflecting salient properties of English modals which remain opaque on other accounts, the option of specifying the modal domain makes Papafragou's (2000) model the most promising one for cross-linguistic application. One attempt to apply Papafragou's (2000) model to languages other than English has already been put forward in Vahedi and Rahimian's (2010) account of Persian modals. Papafragou's (2000) work is reviewed in §6.3.3, and afterwards §6.4 takes the necessary steps in the revision of her framework before it can be successfully applied to Uummarmiutun modals. Other revisions will take place in order to improve the descriptive clarity of modals in general in English as well as other languages. Before we move on, a note on modal expressions and the relevance-theoretic conceptual-procedural distinction is in order.

6.3.2 Modality and the conceptual-procedural distinction

In short, it is assumed within relevance theory that there are two types of meaning: encoded conceptual meaning contributes to the construction of conceptual representations, while encoded procedural meaning constrains the inferential processes the addressee must follow in order to arrive at an optimally relevant interpretation of the utterance (Blakemore, 1987). As for modals, the relevance-theoretic literature does not agree to the question of whether these encode conceptual or procedural meaning. As a relevance-theoretic account on the topic of modality, the present thesis will therefore take a stand in this debate. As it appears below, the section offers nothing more than a stand in the – limited – debate on the matter, and it offers only an initial hypothesis about the Uumarmiutun modals in relation to the conceptual-procedural distinction. The reason is that the notion and definition of procedural meaning is currently undergoing significant development (Carston, 2016b). Systematic investigations of and firm conclusions regarding Uumarmiutun modals and the conceptual-procedural distinction are therefore appropriately saved for later. However, let us take a brief look at the history and meaning of the terms conceptual and procedural meaning before we consider the distinction between these two types of meaning in relation to modality.

Throughout the RT literature, the notion of procedural meaning has been applied in the account of linguistic expressions which constrain and guide pragmatic processes (see Carston, 2016a, for overview of the historical development and application of the term). The conceptual-procedural distinction was first launched by Diane Blakemore (1987) who proposed to account for the meaning encoded by discourse markers like *but* and *after all* as procedural meaning. Later on, Wilson and Sperber (1993) applied the notion to pronouns and thereby showed that procedural meaning can contribute to the truth-conditional content of the utterance. Encoded procedures have in common that they are instructions on how to manipulate the conceptual representations in the interpretation of the utterance (Wilson and Sperber, 1993; Nicolle, 1996; Escandell-Vidal and Leonetti, 2011a). For instance, in the example (6.9) below, which is taken from Wilson (2011), the expression *but* contributes with a constrained procedure rather than to the construction of a concept:

(6.9) The sun is shining, but there are clouds in the horizon.

But indicates that the proposition expressed by the clause following *but* is intended to inhibit a conclusion derivable from the proposition expressed by the first clause (Wilson, 2011: 3; Blakemore, 1987). This analysis is different from an analysis of *but* as encoding a concept of ‘contradiction’, because it recognizes that *but* encodes meaning that tells the hearer to take the representation of the state of affairs in the first and second clause and view the latter as inhibiting a conclusion derivable from the former. Thus, *but* encodes a procedure on how to manipulate the assumptions represented by the first and second clause respectively. For comparison, *clouds* encodes meaning which instructs the hearer to derive an ad hoc concept based on the encoded meaning, the context and the principle of relevance. While procedural meanings indeed constrain inferential processes, procedural meaning is not to be taken as a pragmatic phenomenon anymore than conceptual meaning. Procedural and conceptual expressions alike *encode* constraints. The difference lies in what they constrain. Conceptual meaning constrains which ad hoc representations to access, and procedural meaning constrains how to handle the representations.

As we have seen above, the first two stages of research into the conceptual-procedural distinction applied the term ‘procedural meaning’ to 1) (non-truth-conditional) discourse markers, and 2) (truth-conditional) pronouns. Later on – stage 3 (Carston, 2016a) – the term was applied to expressives (see Blakemore, 2011), and recently – stage 4 – it has been suggested that all concept-encoding words also encode procedural meaning (Wilson, 2011, 2016; Carston, 2016a). This latter stage – stage 4 – is currently under development, and I shall not go further into the discussion on what procedural meaning is and is not, apart from mentioning the following: the main issue in stage 4 is that all conceptual expressions on that hypothesis encode the same procedural constraint, namely to construct an ad hoc concept in accordance with the principle of relevance. As Carston (2016a,b) and de Saussure (2011) rightfully point out, it seems strange that the lexicon would include the same procedural constraint on all expressions which encode conceptual meaning. After all, if a given expression encodes a concept, it contributes a concept to the utterance interpretation, and this concept of course needs to meet the requirements of optimal relevance. The RT comprehension heuristic already predicts that the encoded conceptual meaning is adjusted accordingly if this is necessary to meet the expectations of relevance (Carston, 2016a: 11). In spite of this, Carston (2016a) does not reject the hypothesis that all conceptual expressions are procedural. She does indeed note that the idea of conceptual expressions as encoding pointers rather than representations is worth pursuing. It is beyond the scope of the present thesis to attempt any

conclusions with regards to whether conceptual expressions encode a type of procedural meaning, and the question is better left for future developments within RT. What I shall do, though, is consider how modal expressions relate to the conceptual-procedural distinction.

The most elaborated discussions on modal expressions and the conceptual-procedural distinction are a paper by de Saussure (2011), a doctoral thesis by Nicolle (1996) and the papers by Wilson (2011, 2012, 2016) and Matsui, Yamamoto and McCagg (2006). De Saussure's (2011) paper is a proposal on how to distinguish between procedural and conceptual meaning and not a description of the semantics and pragmatics of individual modal items as such. He briefly discusses modal expressions and uses English *must* as an example. In de Saussure (ibid.) an expression has to be considered representational and hence conceptual, if all possible meanings of that expression across contexts “ [...] can be predicted on the basis of a conceptual core and general pragmatic cognitive principles of inference seeking for relevance” (ibid.: 55). This is the case for modal expressions, according to de Saussure (2011: 74-76), and since an expression cannot be both conceptual and procedural on his account, the meaning encoded by modals is conceptual only. The modal *must* encodes ‘necessity’, and the notions of ‘necessity’ and ‘possibility’ have to do with the necessity or possibility of ‘something’ (de Saussure, 2011: 63). Because this concept of relation calls for other concepts being interrelated (ibid.), modals on de Saussure's (2011) account seem to encode a concept which provides access to assumptions about what the modalized proposition is related to in terms of necessity or possibility.

Contrary to de Saussure (2011), Nicolle (1996) argues that the English modal auxiliaries in the scope of his study encode procedural meaning. Nicolle (ibid.) conceives of the conceptual-procedural distinction as follows:

An expression which encodes conceptual information contains in its logical selection frame information about itself, whilst an expression which encodes procedural information contains information about the interpretation of whatever is within its scope (Nicolle, 1996: 82).

On Nicolle's (1996) account, modal expressions take the ‘situation representation’ – a representational unit below the proposition – within their scope and affect the interpretation of the situation representation.¹⁷⁴ As such, they are considered procedural according to Nicolle (ibid.).

¹⁷⁴ Nicolle's (1996) situation representation is not fully propositional, i.e. a situation representation alone is not truth-conditionally determined, but rather a representation of a situation minus modal, temporal or aspectual information (ibid.: 113).

A third position with regards to modal expressions and the conceptual-procedural distinction is put forward by Wilson (2011, 2012, 2016). Judging from Wilson (ibid.), the relevant question is not whether modal meaning as such is conceptual or procedural, as it is an empirical question whether a given modal *expression* encodes modal meaning conceptually or procedurally. It should be noted that Wilson (ibid.) only discusses epistemic modality and evidentiality, but I see no theoretical reason to assume that her position cannot be extended to root modality as well. The need for recognizing that modal meaning can be encoded procedurally as well as conceptually is due to studies like Matsui, Yamamoto and McCagg (2006), quoted and discussed by Wilson (2011). Matsui, Yamamoto and McCagg's (2006) study "[...] suggests that the acquisition and comprehension of linguistic indicators of epistemic modality or evidentiality may pattern differently depending on whether they are grammaticalised or lexicalised" (Wilson, 2011: 3-4). It turns out, in Matsui, Yamamoto and McCagg's (2006) study that three-year old Japanese children understand the grammaticalized sentence final particles *yo* and *kana* a year earlier than English children understand the corresponding English lexicalized expressions *I think* and *I know*. Wilson (2011) takes this further and suggests that lexicalized indicators of epistemic modality or evidentiality (e.g. certain uses of English *may*, *must*, *I think*, *apparently*, *allegedly*) encode concepts which fall on the conceptual side of the conceptual-procedural distinction. By contrast, grammaticalized indicators of epistemic modality and evidentiality (e.g. the Japanese (un)certainly particles *yo* and *kana*, the interrogative particle *ka* or the hearsay evidential *tte*) are seen as falling on the procedural side. Wilson (2011, 2012, 2016) suggests that epistemic modality may be conceptually as well as procedurally encoded and hence the need to recognize that modal meaning may be procedural as well as conceptual. Adopting this position does not affect the definition of a modal expression given in Chapter 3; the definition remains silent with respect to *how* modal meaning is encoded, and hence it follows that modal meaning, i.e. unrealized force-dynamic potential, may be encoded conceptually as well as procedurally.

The Uummarmiutun modals in focus of the present thesis, i.e. *hungnaq* 'probably', *řukřau* 'should', *lla* 'can' and *huk* 'inner force', seem to encode modal meaning conceptually. This hypothesis rests purely on Wilson's (2011, 2012, 2016) association of the conceptual-procedural distinction with the distinction between lexicalized and grammaticalized items plus the observation that as postbases, *hungnaq*, *řukřau*, *lla* and *huk* are appropriately considered as lexical rather than grammatical items in Inuktitut linguistics. Postbases are, after all, plenty in number and a central

part of the Inuktitut lexicon. For this reason, they are more likely to be conceptual expressions than procedural expressions. Enclitics, on the other hand, appear at the end of the Inuktitut verb after the verbal inflection, and may be candidates for having procedural meaning. The structure of the Inuktitut word is repeated below from Chapter 2:

Figure 6.1: The Inuktitut word

$$\frac{\text{base} + (\text{any number of postbases})}{\text{stem}} + \text{ending} + \text{any number of enclitics}$$

(Nagai, 2006: 35)

It may thus be the case that while postbases like *hungnaq*, *řukřau*, *lla* and *huk* encode their modal meaning conceptually, clitics like *luuniin* ‘or, maybe’ and *kiaq* ‘maybe, must, I wonder’ encode their epistemic modal meaning procedurally. Recall from Chapter 5 that the clitics *luuniin* and *kiaq*, like the postbase *hungnaq* ‘probably’, cover epistemic modal meanings. Besides their additional meanings – i.e. disjunctive in the case of *luuniin* and subjectivity in the case of *kiaq* – their hypothetic status as procedural expressions could be an important difference between *luuniin* ‘or, maybe’ and *kiaq* ‘maybe, must, I wonder’ on the one hand and *hungnaq* ‘probably’ on the other. Future studies should seek to determine which of the Uummarmiutun modal expressions encode their meaning conceptually or procedurally. One way to do so is to examine the given expressions for procedural properties in relation to the following list of characteristics noted for procedural expressions throughout the RT literature:

Characteristics of procedural expressions:

The meaning encoded by a procedural expression ..

- 1) ... is rigid in the sense of not being subject to adjustment (Escandell-Vidal and Leonetti, 2011b; Carston, 2016a)
- 2) ... contains information about the interpretation of the material in its scope rather than the interpretation of itself (Nicolle, 1996)
- 3) ... is not directly accessible to consciousness (Wilson and Sperber, 1993; Wilson, 2011)
- 4) ... cannot combine in complex expressions (Carston, 2016a)

It is important to keep in mind that this is not a list of defining properties or necessary criteria, as some of them do not apply to all expressions analyzed as procedural (see Carston, 2016a, for discussion). It is rather a list of characteristics that expressions analyzed as procedural tend to display, and hence it may serve as a point of departure in the examination of whether the meaning of a given linguistic expression is conceptual or procedural. As it appears, various types of linguistic expressions have been analyzed as procedural expressions, and there is not yet to my knowledge any waterproof definition available which clearly delimits a category of procedural expressions from a category of conceptual expressions (Carston, 2016a,b). Due to the presently unclear diagnostics for recognizing procedural meaning, I shall leave any systematic examination of Uumarmiumutun modals with respect to the conceptual-procedural distinction to future research.

6.3.3 Papafragou (2000)

6.3.3.1 The model

Papafragou's (2000) template for the semantics of modal expressions consists of a logical relation R , which is the modal relation (i.e. representing the modal force) holding between a domain of propositions D and the proposition in the modal scope p :

$$R(D, p)$$

Papafragou's (2000) modal domain 'D' can, as she herself notes, be compared to Kratzer's modal base. One of the crucial differences between these two theoretical entities is that Papafragou (2000) explores the cognitive nature and function of her modal domain, whereas Kratzer's modal base largely remains a formal logical notion. Following Sperber and Wilson (1986/1995), Papafragou (2000: 41) assumes that a thought, or a proposition, may be *entertained* and stored in memory in several different ways, e.g. as a representation of a factual state of affairs or a desired state of affairs. Papafragou (2000) also follows Sperber and Wilson (1986/1995) in the assumption that propositions may be *used* in different ways, i.e. as descriptions or as metarepresentations. Simply put, metarepresentations are representations of descriptions rather than (first order) descriptions of states of affairs. The modal domain is a set of propositions entertained in a certain way, and in

Papafragou's (2000) semantic proposals for modal expressions, the domain restriction specifies how these propositions are entertained. The propositions in the modal domain may be entertained publicly or privately, i.e. they may or may not be realized linguistically. Most often they are not (ibid.).

Papafragou (2000: 43) gives the following semantics for the English modals *can*, *may*, *must*, *should* and later in the book (Papafragou, 2000: 62, 76) she also mentions a semantics for *ought to*:

- (6.10) *May*: p is compatible with $D_{\text{unspecified}}$
Must: p is entailed by $D_{\text{unspecified}}$
Can: p is compatible with D_{factual} ¹⁷⁵
Should: p is entailed by $D_{\text{normative}}$
Ought to: p is entailed by $D_{\text{ideal, moral imperatives}}$ (Papafragou, 2000)

The semantic proposals predict that the individual modal expressions permit different kinds of domains of propositions, and the domain restrictions correspond to how the propositions in the given domain are entertained. Some modals – *can*, *should* and *ought to* – are lexically restricted to a certain domain, while others – *may* and *must* – are in need for domain saturation. There is no correspondence between limits on root-epistemic overlap and whether or not a modal is lexically restricted to a certain domain. *Should* for instance, is restricted to a normative domain and perfectly compatible with epistemic as well as with root interpretations. This will be discussed later. Before presenting how these semantic representations interact with pragmatic principles, let us first take a closer look at different uses of propositions and the nature of Papafragou's (2000) modal domains.

¹⁷⁵ It is not relevant whether the given propositions in the modal domain are facts in the sense of 'true' about the world, given that the purpose is to analyze what the speaker intends to communicate rather than ontological facts. The speaker who uses *can* conveys that p is compatible with a set of facts, and whether or not the propositions in the domain are really facts or not corresponds to the question whether the speaker is really speaking the truth or not. Such questions are not in the scope of a linguistic analysis, since we may very well use language to present untrue statements about the world, and interlocutors appear capable of interpreting such utterances even though they may not be true. If this were not the case, lying would not exist, because it would not be possible to interpret untrue statements (see also §6.2 above).

6.3.3.2 Modal domains and ways of using propositions

Table 6.1 below is an attempt to list the domains mentioned throughout Papafragou’s (2000) book, along with the descriptions provided therein. It should be noted that Papafragou (2000) does not include semantic proposals for bouletic modals, i.e. modals expressing desires such as *want*. Nevertheless, given her description of the ‘desirability domains’ it appears to me that bouletic modal meaning could be associated with such domain restriction.

Table 6.1: Papafragou’s (2000) domains

	Papafragou’s domain label	Papafragou’s description of the domain(s)	Example sentences (my own responsibility)	Traditional modal meaning label
Propositions used descriptively	Factual domain	Propositions describing the actual world	Peter can swim.	Dynamic, root
	Regulatory domains (sometimes called normative domains)	Laws, regulations, rules, legal rulings, social rulings, religious rulings, chess ruling	Peter may / must / should participate in the competition.	Deontic, root
	Ideal/stereotypical domains	Propositions are handled as states of affairs in ideal or stereotypical worlds, e.g. the domain of moral beliefs	Peter ought to be home by 10 am.	Deontic, root
	Desirability domains	Propositions handled as descriptions of states of affairs in worlds desirable from some or other’s point of view	Peter wants to go home.	Bouletic, root
Propositions used interpretively (metarepresentations)	Belief domain ¹⁷⁶	Propositions entertained and stored as abstract representations (i.e. hypotheses), or abstract representations (where the initial representation may or may not be attributed to some source).	Peter might / must be there by now.	Epistemic

¹⁷⁶ Papafragou (2000: 42) does not label this domain the ‘belief domain’ in her initial presentation of domains. However, at a later point, Papafragou (2000: 72) describes epistemic – i.e. metarepresentational – uses of *must* with the label ‘D_{belief}’. The label ‘belief’ reflects the nature of the propositions in the metarepresentational domain as representations of mental objects rather than representations of (factual or desirable) states of affairs.

Papafragou (ibid.) states that she does *not* intend her list of domains to be exhaustive, and she assumes that in cross-linguistic studies, “[...] *individual modal expressions will come out as permitting different kinds of domains of propositions as restrictors*” (ibid.: 42). This flexibility is among the aspects that makes Papafragou’s (2000) model especially valuable for the present purpose of accounting for Uummarmiutun modals, because the specification of the modal domain can be done entirely in accordance with language specific facts.

The distinction between root and epistemic modal meaning on Papafragou’s (2000) account comes down to a difference in how the proposition in the modal scope is used. Following Sperber and Wilson (1986/1995), Papafragou (2000: 68) writes that any representation of propositional form can be used descriptively or interpretively. A proposition represented by the linguistic material in the scope of a root modal is used descriptively,¹⁷⁷ whereas a proposition represented by the linguistic material in the scope of an epistemic modal is used interpretively, i.e. as a metarepresentation. A descriptively used representation is a truth-conditional description of external circumstances, whereas an interpretively used representation is used to represent another representation whose propositional form it resembles in logical properties, that is, as a metarepresentation (ibid.: 68). Drawing on Sperber and Wilson (1986/1995) Papafragou (2000) notes how this distinction between descriptive and interpretive use corresponds to a distinction between descriptive and interpretive attitudes. Her conception of descriptive and interpretive attitudes goes as follows:

Descriptive attitudes are attitudes towards propositions which are regarded as truth-conditional representations of states of affairs: for instance, fearing, demanding or regretting are cases of descriptive attitudes.

Interpretive attitudes are attitudes towards propositions *qua* propositions, i.e. abstract representations which can be entertained as elements of thinking episodes in an agent’s mental life: doubting, proposing or wondering are examples. (Papafragou, 2000: 68)

To illustrate the distinction, Papafragou (2000: 69) provides the following examples:

¹⁷⁷ Or, more precisely; this proposition is derived on the basis of the linguistic material in the scope of the modal. The proposition is a representation resulting from enrichment of the logical form. That is, the logical form – here the semantic content of the modal scope – leads to a representation which has propositional form. See Boye (2005, 2012a) for a different view on root modals and scope, which will be addressed in due course.

- (6.11) a. That the cabinet is corrupt is very sad.
b. That the cabinet is corrupt is completely unfounded.

In (6.11a) the *that*-clause is used as a description of a state of affairs, which the speaker finds very sad. In (6.11b), on the other hand, the same *that*-clause is used to represent an abstract hypothesis. That is, it is used to represent the thought that ‘the cabinet is corrupt’ rather than the state of affairs described by *the cabinet is corrupt*.

As for modals, a root modal meaning on Papafragou’s (2000) account scopes over propositions handled as descriptions of states of affairs in the actual, or in an alternative – ideal, stereotypical, etc. – world (2000: 70). This is similar to the use of the *that*-clause in (6.11a), which is used to describe a state of affairs towards which the speaker expresses a sad attitude. Epistemic modal meaning does not scope directly over descriptions of state of affairs in the (actual, ideal or stereotypical) world, but rather over propositions entertained *qua* propositions (ibid.). This corresponds to the use of the *that*-clause in (6.11b), which is used to represent a thought or a hypothesis (which represents a description of a state of affairs) towards which the speaker has an *epistemic* attitude. The distinction between root and epistemic modal meaning is as follows on Papafragou’s (2000) account: when a modal receives an epistemic interpretation, the encoded modal relation holds between propositions entertained *qua* propositions, i.e. as thoughts or hypotheses. Being thoughts or hypotheses, these are propositions entertained as representations of descriptions, which are themselves representations of states of affairs. Hence, they are metarepresentations, whereas descriptions are first order representations. When a modal receives a root interpretation, the modal relation holds between descriptions of states of affairs in the actual, ideal, or a stereotypical world. That is, on root modal interpretations the modal relation is not presented as holding between thoughts, but rather between descriptions of states of affairs in actual, ideal, or normative worlds.

It is interesting to note that this distinction between root and epistemic modal meaning is different from Boye’s (2005, 2012a). Since Boye’s (2005, 2012a) work is operationalized in the present thesis along with Papafragou’s (2000) work, and since we shall later borrow notions from Boye’s cognitive functional work in the relevance-theoretic semantic proposals for Uummarmiutun modals, I shall briefly explicate the main theoretical difference between Boye’s (2005, 2012a) and Papafragou’s (2000) accounts. This difference between them comes down to their differing

conceptions of the proposition. Papafragou (2000) and Boye (2005, 2012a) both recognize a difference between root modal meaning and epistemic modal meaning when it comes to their source and scope, i.e. the entities between which the modal relation holds. Their respective accounts are also similar in that they both take epistemic modals to scope over more abstract entities than root modals. They differ, however, when it comes to which levels of representation they assume are involved:

Table 6.2: Papafragou's (2000) and (Boye's (2005, 2012a) levels of representation

	Papafragou (2000)	Boye (2005, 2012a)
Epistemic modals	Scope over metarepresentations, i.e. representations of propositions (which are themselves representations of states of affairs)	Scope over propositions (Boye, 2005, 2012a)
	Take metarepresentations in the modal domain	The source (of the modal force) is an epistemic knowledge-related source, i.e. knowledge, producing an epistemic force towards verification (Boye, 2005)
Root modals	Scope over propositions (which represent states of affairs)	Scope over states of affairs (Boye, 2012a)
	Take propositions in the modal domain	The source is a physical, social or psychological source, producing a force towards actualization (Boye, 2005)

Which account is most useful with respect to which levels of representation are involved in root and epistemic meaning respectively? Boye (2005, 2012a) distinguishes between states of affairs and propositions, and Papafragou (2000) distinguishes between descriptively used propositions and interpretively used propositions. Which distinction is correct depends, in my view, on what kind of representation one believes is found in the scope of a root modal. On Boye's (2005, 2012a) accounts, root modal meaning has to do with potential actualization, and hence there is no proposition involved because propositions cannot be actualized. Epistemic modals, on the other hand, take propositions in their scope on Boye's (2005, 2012a) account since epistemic modal meaning has to do with verification, and propositions can be verified, whereas states of affairs can be actualized. If one follows Boye's (2005, 2012a) position where the predication in the scope of

a root modal is a state of affairs because it does not have a truth-value, then obviously there is no need to assume that the predication in the scope of an epistemic modal is a metarepresentation. If, on the other hand, we follow the RT framework, then the developments and interpretations of the linguistic material in the scope of a root modal do result in a representation which has propositional form (recall §6.2.3.3). This is so because assumptions about temporal reference and other referent assignments are necessary in order to interpret the linguistic material in the scope of the modal. Take example (6.12) below:

(6.12) Bob must do the dishes.

The interpretation of *Bob do the dishes* includes assumptions – however loose they may be – like when the event of dish washing is intended to take place (if actualized) plus a referent assignment to Bob. In this sense, the interpretation of *Bob do the dishes* has a propositional form, as it is a representation of a state of affairs which includes assumptions about location in time and space. Boye (2005, 2012a) does not deny that states of affairs may have tense and reference assignment. Nevertheless, within RT, the process of tense and reference assignment (plus other developments of the logical form such as conceptual adjustment) results in a propositional representation, and hence the representation in the scope of a root modal has propositional form. And it is truth-conditional, because a speaker of the language will know which conditions need to be obtained in order for *Bob do the dishes* to be true.

Propositions in the scope of a root modal are used as descriptions of states of affairs, and the interpretation of a root modal statement therefore concerns the potential actualization of the state of affairs represented by the description. Epistemic modal meaning, on the other hand, is concerned with the potential verification of the proposition in the modal scope. This proposition is therefore handled not as a representation of a description of a state of affairs that may or may not be actualized, but as a thought which may or may not represent a true description of the world. The present account of Uummarmiutun modals is founded on a relevance-theoretic framework, and hence any modal is assumed to scope over a representation with propositional form, and the root and epistemic distinction is accounted for as a distinction in how this propositional form is used. Since the main difference between Boye (2005, 2012a) and Papafragou (2000) comes down to their conceptions of the proposition – which follow directly from their respective theoretical premises

rather than different views on modality as such – there should be no problem in operationalizing notions and insights from Boye’s (2005, 2012a) works in the formation of the semantic proposals for Uumarmiutun modals in the present thesis.

6.3.3.3 Papafragou’s (2000) modal semantics and pragmatics

On Papafragou’s (2000) account, interpretations of modal statements involve recovering the intended modal restrictor, i.e. assumptions about the propositions constituting the modal domain. The modal restrictor is unspecified in the semantics for *must* and *may*. For *can* and *should*, the modal restrictor is constrained by the semantics such that it is lexically specified within what type of domain the propositions restricting the modal interpretation should be chosen. The context-specific modal restrictions may be further narrowed down to a more specific concept. That is, the hearer accesses a more or less specific set of background assumptions – entertained as e.g. factual or normative – to which the modal relates the proposition in its scope. In order to do so, the hearer relies on “[...] *assumptions which are easily accessible from the encyclopedic entries of the concepts in the complement propositions and other assumptions which are contextually available*” (Papafragou, 2000: 49). It is obviously not always necessary to access the exact propositions constituting the modal domain, as long as enough detail is accessed in order to arrive at an optimally relevant interpretation. For instance, in an utterance of *Of course you can – the law allows you to* in example (6.15) further below, an optimally relevant interpretation hardly requires the hearer to recover the specific set of legal paragraphs constituting the modal domain. Let us work through an example to see how the semantics and pragmatics of English modals are accounted for in Papafragou (2000).

The meaning contributed by *can* is that the modalized proposition is compatible with a set of propositions which are entertained as factual:

(6.13) Computer-aided instruction can co-occur with more traditional methods of teaching.

According to Papafragou (ibid.: 48), the following representation is the logical form of (6.13):

(6.13')_p[Computer-aided instruction co-occurs with more traditional methods of teaching] is compatible with D_{factual}

Given the proposed semantics, *can* contributes to an interpretation where the modalized proposition is compatible with a set of assumptions which are to be entertained as descriptions of facts. The encoded domain restriction provides a conceptual search-space, and the modal domain of *can* is identified in accordance with available contextual assumptions and the principle of relevance (Papafragou, 2000). This free pragmatic enrichment of *can* can be exemplified by (6.14), where the semantics of *can* is “[...] contextually enriched to the point of isolating a certain sub-domain of factual assumptions which is intended to be the modal restrictor” (Papafragou, 2000: 66). It is important to keep in mind, as Papafragou (2000: 49) notes, that these paraphrases are merely shorthand for the full set of assumptions which could fill the modal domain in the interpretation of (6.13):

(6.14)

- a) In view of the way schools are run these days, computer-aided instruction can co-occur with more traditional methods of teaching
- b) In view of the technical equipment available for education purposes, computer-aided instruction can co-occur with more traditional methods of teaching

Papafragou (2000: 49) notes that an interpretation of a modal statement does not always necessitate the recovery of the exact set of e.g. factual or normative propositions constituting the modal domain. In many cases, the description of their type – e.g. factual – plus accessing an assumption about the kind of facts – e.g. facts about how schools are run these days – is sufficient.

Papafragou (2000: 54, 58) acknowledges that *can* may also be used in English to express deontic meanings, i.e. to talk about permissions. It may therefore seem odd that *can* is lexically restricted to ‘facts’, especially now that a label like ‘normative domain’ is available in Papafragou’s (2000) list of domains. As I read Papafragou (2000), propositions can represent descriptions of norms or rules – or any other states of affairs – but still be intended to be *entertained* as facts. Example (6.15) below will be used to illustrate this point:

(6.15) Alice: I can’t leave my husband penniless.

Lawyer: Of course you can - the law allows you to. (Papafragou, 2000: 50)

The divorce lawyer's utterance encodes that 'Alice leave her husband penniless' is compatible with D_{factual} , but the set of propositions in the domain are contextually narrowed down to include assumptions about legal regulations (Papafragou, 2000: 50). This free pragmatic enrichment is guided by the principle of relevance and is re-enforced by the lawyer's additional sentence *the law allows you to*. These legal regulations are however entertained as facts about the world which could have been incompatible with Alice leaving her husband penniless. Whatever goes in *can*'s domain is entertained as facts with a bearing on *p*. That is, the context-specific restriction on *can* is a sub-set of facts with a bearing on *p*, and this sub-set may be e.g. physical or practical facts with a bearing on *p* (as in (6.14b)), or it may be legal regulations as in (6.15). This is perhaps more clear if we consider the example in (6.16) below:

(6.16) You can't drink and drive.

Say that the context-specific interpretation of (6.16) is such that the modal domain contains propositions representing the law. Given that *can* restricts the factual domain, the speaker by using *can* in (6.16) conveys that she relates 'you drink and drive' to a set of facts, and thereby she conveys that the legal regulations in and of themselves constitute factual circumstances which are incompatible with 'you drink and drive'. Papafragou's (2000) proposed semantics for *can* thus seems to account for various context dependent interpretations of *can* in that the domain may be narrowed down in accordance with the principle of relevance.

While *can*, *should* and *ought to* are lexically restricted to a certain modal domain which is then narrowed down in context, other modals – i.e. *must* and *may* – are unspecified with respect to modal domain and thereby in need for domain saturation according to Papafragou (2000). Papafragou (ibid.) – as well as Rahimian and Vahedi (2010) – talk about the lexically unspecified modals as 'semantically incomplete'. It therefore seems that the choice to use the term 'saturation' about the process involved in the interpretation of those modals is connected to the view of domain specification as being necessary for an optimally relevant interpretation of an utterance in which they occur. Papafragou's (2000) analysis of *must* will be used here to show how her domain saturation works. Let us assume that a person, Mary, utters (6.17):

(6.17) I must sneeze.

The semantics of *must* contributes to the following logical form according to Papafragou (ibid.):

(6.17') Logical form: p [speaker sneezes] is entailed by $D_{\text{unspecified}}$

The hearer is expected to retrieve that 'Mary sneeze' is a necessary outcome given her physical conditions and circumstances. The unspecified domain encoded by *must* is therefore narrowed down to a sub-set of factual propositions, namely propositions representing facts about the physical conditions of the speaker according to Papafragou (ibid.: 59). I assume that Papafragou (2000) bases this expectation to the hearer on his ability to access encyclopaedic information about sneezing in combination with the syntactic environment and contextual assumptions. In (6.17), the unspecified modal domain of *must* was saturated to a sub-set of factual propositions. Papafragou (2000: 59-60) provides other examples where *must* takes regulatory domains of different types.

Also in (6.18), the hearer will have to determine how the propositions entailing the modalized proposition are entertained, and Papafragou (2000: 72) uses the label 'beliefs' to describe the domain of *must* in this context:

(6.18) Some of the neighbors must have seen the burglars.

Papafragou (2000) provides the following logical form for (6.18):

(6.18') [p [Some of the neighbors have seen the burglars]] is entailed by D_{beliefs}

Beliefs are propositions entertained *qua* propositions and hence they are metarepresentations. From the hearer's point of view, Papafragou (2000: 70) writes, "[...] *the comprehension of an epistemically modalised utterance involves making reference to the communicator's evaluation of a certain proposition in terms of mentally represented evidence*". Like the propositions in the modal domain of an epistemic modal, the proposition in the scope of the epistemic modal meaning is also a metarepresentation: "[*t*]he propositions embedded under an epistemically understood

modal is not to be treated as directly picking out a state of affairs in the world, but as describing what Sweetser has called an ‘epistemic object’” (ibid.).¹⁷⁸

As mentioned above, the modal domain of *should* is lexically restricted, but this does not falsely predict that *should* is restricted to root modal meaning on Papafragou’s (2000) account. Papafragou argues that *should*’s restriction to the normative domain is compatible with epistemic interpretations as well as root interpretations: the root interpretations “[...] occur when normative assumptions are regarded as representations of external states of affairs, whereas epistemic interpretations arise when the expectation-conforming evidence is focused upon qua set of internal propositional representations.” (ibid.: 76).¹⁷⁹ Consider Papafragou’s (2000: 75) example in (6.19):

(6.19) John should be easy to talk to.

- Would be acceptable if the speaker knew nothing about John’s habits from first-hand experience, but had heard that in principle, John is very kind to students.

(Adapted from Papafragou, 2000: 75)

According to Papafragou (ibid.), *should* expresses ‘norms/expectations’, and in (6.19), the norms and expectations operate on mental objects, i.e. thoughts, which is what gives the epistemic interpretation according to Papafragou (2000). On any interpretation, *should* expresses “[...] a necessity relative to existing stereotypes, or norms. The comprehension of *should* relies quite heavily on the sort of structured knowledge humans typically possess about the normal course of events” (Papafragou, 2000: 62).

¹⁷⁸ One may ask what the difference is between a belief and a fact; after all, we tend to believe in things we regard as facts. Speakers view their beliefs about the world as facts about the world since the subject does not distinguish between its own beliefs and knowledge. The reason why Papafragou (2000) chooses the label ‘belief’ to describe the domain of epistemic *must* is hardly an intension to insinuate that epistemic statements are based on uncertain assumptions – it is rather based on her intention to reflect that the propositions in that domain are metarepresentations. The way I read Papafragou, (2000), the difference between a ‘factual’ domain restriction and a ‘belief’ domain restriction does not pertain to differences in the speaker’s assumption about the ontological status of the states of affairs described or metarepresented by the propositions in the modal domain. It is rather a difference in terms of how they are handled. She writes that the “[l]ogical relations such as entailment or compatibility apply only among propositions within a given domain” (ibid.: 42). It therefore seems that the ‘belief’ restrictor is intended to reflect that the modal relation holds between mental objects, i.e. representations of states of affairs – not the states of affairs themselves.

¹⁷⁹ Papafragou (2000) follows Sweetser (1990), and the terms ‘external’ and ‘internal’ should therefore not be misinterpreted as labels for external and internal location of the modal source. Rather, Papafragou (2000) uses them to distinguish between states of affairs taking place in the physical world, i.e. external to the mind, and representations (of states of affairs) located inside the mind as mental objects, i.e. thoughts.

It turns out, judging from Rahimian and Vahedi (2010), that Papafragou's (2000) framework not only applies to the semantics and pragmatics of English modal verbs but also to Persian modal verbs. Among the Persian modals analyzed by Rahimian and Vahedi (2010), most encode a compatibility relation while a single one – *bâyad* 'must' – encodes an entailment relation. Some of the modals are analyzed as unspecified with respect to modal domain, and one modal – *mitâvan* 'can' – is analyzed as lexically restricted to the factual domain. There is one domain restrictor in the semantic proposals for Persian modals in Rahimian and Vahedi (2010: 95) which does not occur among the modals analyzed by Papafragou (2000), namely a restriction to the desirability domain; *betâvan* and *bešavad* both encode that the proposition is compatible with $D_{\text{desirability}}$. The difference between them is that *betâvan* is used in very formal contexts whereas *bešavad* is used in informal contexts (see Rahimian and Vahedi, 2010, for details). Another difference between them is that *bešavad* is limited to the desires and wishes *of the speaker* (ibid.: 106-107), while *betâvan* is limited to the desires, wishes and plans *of the interlocutors* (ibid.: 108). For reasons unclear to me, Rahimian and Vahedi (2010) do not themselves include this difference in the semantics of *betâvan* and *bešavad*.

When it comes to the reflection of lexical restrictions on modal type, Papafragou's (2000) semantic template facilitates great descriptive detail and room for reflecting cross-linguistic variation. The notion of modal domains and the option of characterizing their individual restrictions lexically offers – as Papafragou (2000: 42-43) herself points out – a useful tool for describing modal expressions cross-linguistically. I assume that the restrictions of *betâvan* and *bešavad* on speaker attribution and interlocutor attribution respectively could easily be reflected in a semantic proposal within Papafragou's (2000) framework along with the restriction on how the propositions in the domain are entertained. That is, the semantic proposals for *betâvan* and *bešavad* would include $D_{\text{desires-speaker}}$ and $D_{\text{desires-interlocutors}}$ respectively. The domain specification restricts the search space in which the modal restrictor is found, and the restrictions on *betâvan* and *bešavad* appear to restrict the search space in terms of a) how the propositions are entertained, i.e. as descriptions of desirable states of affairs, and b) a restriction on attribution of these desires, i.e. to the speaker or the interlocutors. The specific domain restriction encoded by a given modal is an entirely empirical question. It is obviously not the case that all desirability modals encode restrictions on attribution of the desires, and attribution restrictions will hence only figure in the semantic proposals for those that do. The point here is not to analyze Persian modals, but rather to show how language specific

properties of modal expressions can be reflected easily in a semantic proposal within Papafragou's (2000) framework.

6.4 Towards the formation of a lexical semantics for modal expressions

6.4.1 Challenges

Papafragou's (2000) framework is found to be promising for reflecting the semantics and pragmatics of modal expressions cross-linguistically. This is especially due to the flexibility and descriptive accuracy offered by the notion of modal domain restrictions as well as the explicit account of the interaction between semantics and pragmatics. There is therefore reason to expect that even though Papafragou (2000) only applies her model to English modals, the model is flexible enough to capture modals cross-linguistically.

In spite of being a promising model for the present purpose, a couple of aspects need elaboration before Papafragou's (2000) model can be applied to Uummarmiutun modals. The central aspects in need of elaboration have to do with the rendering of modal force restrictions, and the rendering of restrictions to root or epistemic meaning:

Modal force

Papafragou's (2000) framework does not allow for underspecification of the modal relation as it stands now. Neither entailment or compatibility will reflect the modal force restriction on Uummarmiutun *hungnaq* 'probably', which covers both these strengths. One option could be to argue that a modal like *hungnaq* is restricted to 'compatibility or entailment'. This, however, seems to suggest that the modal needs saturation or another type of disambiguation between these two forces, which does not seem to be the case. More importantly, the dichotomy opposition of modal forces in terms of entailment and compatibility – corresponding to the philosophical notions of necessity and possibility – is not adequate for capturing linguistic modal expressions as argued in Chapter 3, §3.3. I shall

therefore explore the option for integrating Boye's (2012a) notion of 'less than full support' into Papafragou's (2000) model before we apply it to Uummarmiutun modals.¹⁸⁰

Root and epistemic restrictions

Papafragou's (2000) account is applied to English modals most of which display root-epistemic overlap. Any proposition may be used descriptively or interpretively, and in the absence of a restriction to either use, *may*, *must* and *should* are correctly predicted to allow both types of uses and hence epistemic as well as root interpretations. Uummarmiutun modals, on the other hand, are restricted to either root or epistemic modal meaning. This needs to be reflected in their semantic proposals, and a specification of the modal domain restriction is not sufficient for predicting that a modal is restricted to e.g. root modal meaning. An expression can, for instance, be restricted to D-normative without allowing for epistemic interpretations. This is not unique to Uummarmiutun. The Gitksan modal *anook* is described by Matthewson (2013) as deontic possibility. In Papafragou's (2000) model, *anook* would be lexically restricted to D-normative like *should*.¹⁸¹ But unlike *should*, *anook* cannot be used to express epistemic meanings, and hence we need a way to reflect in the semantic proposal for modals like *anook* that these are lexically restricted to descriptive use only. That is, we need an option for including in the semantic description whether or not a modal allows for root interpretations, epistemic interpretations or both.

In addition to revisiting those aspects of Papafragou's (2000) model, we also need to discuss issues pertaining to the structure of the lexical entries for modals, more specifically the possible challenges with proposing unitary semantics for root-epistemic overlapping expressions.

6.4.2 Modal force

Papafragou (ibid.) uses the labels entailment and compatibility to reflect the modal force expressed by the respective English modals. However, resort to entailment or compatibility in the semantic proposal does not capture the meaning encoded by modals like Uummarmiutun *hungnaq* 'probably' and other modals with variable force. Moreover, following the argumentation in Chapter

¹⁸⁰ Groefsema's (1995) model for capturing modal semantics allows for the reflection of more fine-grained nuances among various lexical restrictions on modal forces than Papafragou's (2000). However, since some Uummarmiutun modals appear to have a broader force restriction than the modals examined in Groefsema (1995), I shall not explore the option of applying Groefsema's (ibid.) model in the attempt to reflect force restrictions.

¹⁸¹ *Anook* would of course encode a compatibility relation while *should* encodes entailment. This does not affect the argument here.

3, the conception of modal force as a dichotomy in general poses problems for the description of linguistic modal meaning. Papafragou's (2000) framework for semantic analyses of modals nevertheless has other advantages, such as domain specification, for cross-linguistic applicability. I will therefore attempt in the present section to increase the cross-linguistic applicability of Papafragou's (2000) framework further by means of incorporating Boye's (2012a) notion of degrees of support in the shape of the more general notion of degrees of force presented in Chapter 3, §3.3.4.

As outlined in Chapter 3, the linguistics literature on the semantics and pragmatics of modal expressions tends to distinguish between two degrees of modal force, which are inherited from formal philosophical logic. Formal approaches building on Kratzer's (e.g. 1981, 2012) work tend to describe modals as either universal or existential quantifiers. The distinction between universal and existential quantification can be compared to other formal logical distinctions such as entailment and compatibility (employed by Papafragou (2000)) and to the distinction between necessity and possibility (e.g. Lyons, 1977) found in the functional-typological (e.g. van der Auwera and Plungian, 1998; Auwera and Ammann, 2013) as well as in the formal (Hacquard, 2011; Kratzer, 1981, 2012) literature on modality. The use of these logical notions inherited from philosophical logic in the description of linguistic modal expressions has already been discussed and problematized in Chapter 3; the logical notions of necessity and possibility as well as compatibility and entailment do not adequately match the meaning communicated with linguistic modal expressions unless the notions are modified severely. Moreover, as noted throughout the thesis, some languages – including Uumarmiutun as we saw in Chapter 5 – have modals which are not lexically restricted to a single modal force.¹⁸² If it is the case that not all modals lend themselves to a description in terms of one of the two traditional forces, then we need further options for reflecting restrictions on modal force in the semantic descriptions of modals. Peterson (2010) proposes a formal semantics account of varying force modals: Gitksan *ima* encodes existential quantification, and the modal force depends on whether the ordering source is empty or filled. Since the present study intends to account for modal meanings in a cognitively plausible framework, we cannot rely on the context to fill ordering sources when accounting for different interpretations of a modal expression, as the cognitive reality of ordering sources is questionable.

¹⁸² That is, they are compatible with “compatibility/possibility” interpretations (like e.g. English *can* and *may*) as well as with “entailment/necessity” (e.g. like English *should* and *must*).

Moreover, Peterson’s (2010) explanation seems to presuppose that the modal is disambiguated in terms of modal force when it is used in an utterance. This may be true for Gitksan *ima* and *k̄at*, but it is not necessarily the case for Uummarmiutun *hungnaq* ‘probably’. I propose that we reflect modal force semantically similarly to the way Boye (2012a) distinguishes between epistemic forces and incorporate this into Papafragou’s (2000) model. This allows us to – among other things – capture the semantics of modals with varying force without having to postulate that the given modal is always disambiguated into one of the forces that Indo-European modals lexically discriminate between.

Recall from Chapter 3 that epistemic modality is defined in terms of less than full epistemic support in Boye (2012a), and that the notion of degrees of epistemic support covers a scale divided into full support, partial support and neutral support (Boye, 2012a). Linguistic expressions may be lexically restricted to full, partial or neutral support, or they may be restricted to ‘less than full support’. The relevant part of Boye’s (2012a) division into degrees of epistemic support is repeated here from Chapter 3:

Table 6.3: Modal forces are marked with grey

Full	Partial	Neutral
Full	Less than full	

(Adapted from Boye, 2012a: 22)

In Chapter 3 it was proposed that Boye’s (2012a) notion of epistemic support is generalized into modal force and applied to the analysis of root as well as epistemic modals. In accordance with the definition of modality in Chapter 3 and Boye (2005), full epistemic support is not considered an epistemic modal meaning, because it has to do with full certainty. Full epistemic support corresponds to *realized* force-dynamic potential, which is different from *unrealized* force-dynamic potential in terms of which modality is defined (see Chapter 3, §3.3.4-5 and §3.4.2).¹⁸³ The proposal is therefore that the notions of partial, neutral and less than full force figure in the semantic descriptions of modal expressions. As for *hungnaq* ‘probably’, the force is restricted to less than

¹⁸³ As it appears in Boye (2012a), some expressions cover ‘more than neutral support’ on the epistemic scale, i.e. they cover partial and full epistemic support. These expressions are probably ambiguous between a modal and a non-modal meaning. The existence of such expressions is obviously no threat to presuming a category of modal meaning. After all, the existence of a conceptual category does not predict that all linguistic expressions encode a meaning which falls on one of the sides of the category – only that some expressions do (see Chapter 3).

full force'. This predicts that *hungnaq* is compatible with partial force interpretations as well as neutral force interpretations as observed in the data set (see Chapter 5, §5.3.2).

The proposed division of forces moreover eliminates problems inherited from philosophical modal logic with respect to the conceptions of entailment and necessity: as we saw in Chapter 3, using these notions may falsely predict that an epistemic 'necessity modal' expresses full speaker certainty, because necessarily(p) entails p. The proposed force division, on the other hand, allows a clear distinction between strong modal force and full certainty. On Papafragou's (2000) account, epistemic *must* conveys the assumption that the truth of the proposition is entailed by propositions entertained as beliefs. The use of 'entailment' in the semantic proposal for *must* however leads to similar problems as the philosophical notion of necessity; just like necessarily(p) entails the truth of p, the expression that beliefs entail p also entails the belief that p is true. In other words, if a) a speaker expresses that p is entailed by her beliefs, and b) individuals generally believe what they believe because they believe it is true, then the statement that 'p is entailed by a domain of beliefs' means that p is entailed by something the speaker holds to be true. In this way, a proposition p in the scope of an 'entailment modal' is presented as a true belief, because p is entailed by something true. However, the speaker who uses *must* does (at least) not (always) express full commitment to the belief that the proposition in the scope of *must* is true.¹⁸⁴

Papafragou (2000) solves the entailment problem by pointing out that epistemic *must* relates metarepresentations. This means that *must*(p) expresses that thoughts – i.e. propositions entertained as thoughts – entail the thought that p. In this way, the speaker has merely made claims about the relation between thoughts, not about the external world. Nevertheless, the problem, as I see it, remains the same. Let us assume that the speaker passes by John's house and sees that the lights are on. On the cell phone, she tells her friend *John must be home*. Apparently, she is fairly certain that given the burning lights, John is home, but nevertheless does not feel confident enough about this inference to use a simple declarative. If a speaker who uses *must*, with the intention to yield an epistemic interpretation, communicates that p is a thought which is entailed by another

¹⁸⁴ Recall from Chapter 3 that there is some dispute with respect to whether or not epistemic *must* is in fact always as strong as a simple declarative. For now, I use *must* as an example following Papafragou's (2000) intuitions that statements with epistemic *must* do not express full commitment to the truth in its scope. Even if one assumes that *must* can be used to express full certainty, there is still a need for a distinction between full certainty on the one hand and a less than full certainty which is stronger than mere 'possibility' on the other. This is so, because at least some modals, e.g. *hungnaq* 'probably', cannot be used to express full certainty, while it can be used to express a degree of certainty which falls between full and neutral.

thought *q*, and *q* is her thought that the lights are on, then *q* represents a thought she holds as a true representation of the world. After all, she has just observed the burning lights. If *p*, i.e. John be home, is entailed by *q*, then it is a thought which is entailed by a thought the speaker holds to be true, and thereby it appears that ‘John be home’ is a thought she believes to be true. If, on the other hand, we work with the force division proposed in Boye (2012a) illustrated in Table 6.3 above instead of Papafragou’s (2000) original employment of entailment (and compatibility), the problem goes away. An expression like *must* is restricted to ‘partial force’,¹⁸⁵ and hence the propositions in the modal domain are not presented as succeeding in pushing the modalized proposition all the way to verification. ‘Partial force’ captures that a modal like *must* is strong, in that the force pushes the proposition part of the way towards verification rather than staying neutral (e.g. like *may* and *can*).

Another benefit from employing the notion of force along with Boye’s (2012a) divisions is that it facilitates the description of one of the Uumarmiutun expressions *niq* ‘apparently’ (see Chapter 5, §5.2.5). The data set shows that *niq* is restricted to full speaker certainty, and moreover it encodes a restriction such that it evokes the idea of a piece of evidence which fully backs up the truth of the proposition in its scope. *Niq* is thereby appropriately described as an expression of full epistemic force, which is clearly stronger than the epistemic force of expressions like *must*, at least in the case of the example with the speaker who observes John’s burning lights etc. and utters *John must be home*. We therefore need to propose a lexical restriction on *niq* which reflects that *niq* is *only* suitable for expressing full certainty, and full epistemic force may be used to reflect this property of *niq*.¹⁸⁶ The proposed division of modal forces also reflects the clear definition of modality where full certainty (and causativity) is distinguished from modal meaning. Incorporating this division of forces into the semantic representation of modal expressions thereby allows us to clearly reflect whether the given expression is a modal and to capture subtle differences between the given expression and related non-modal expressions.

As for the modal expressions that do not conform to the traditional dichotomy of modal force, the label ‘less than full force’ (see Table 6.3) is especially useful; it allows us to easily capture the modal force restrictions encoded by those modals that are used to express both of the modal

¹⁸⁵ Or at least *expresses* partial force in the example under discussion if one assumes that *must* can also express full confidence.

¹⁸⁶ If one assumes *must* can express full certainty in addition to almost but not full certainty as in the case of the speaker who walks by John’s house, the force restriction on *must* (on epistemic uses) would simply be ‘more than neutral force’ (see Chapter 3, Table 3.3).

forces traditionally labelled as ‘possibility’ and ‘necessity’. Those modals may now be described as restricted to ‘less than full force’ from the modal domain. Like other encoded meanings, I assume that encoded ‘less than full force’ may be narrowed down when the modal is used in an utterance if a specification of the modal force to neutral or partial force is necessary for an optimally relevant interpretation. The question is now how fine grained this scale is, and whether further force-labels are required to describe the force restrictions encoded by modals cross-linguistically.

Further division of forces?

Boye (2001, 2005) employs a sub-division of the degree of force which is here labelled as ‘partial modal force’ into maximum and non-maximum force in his account of Danish modals:

(6.20)

Force	Maximum	<i>skulle</i> ‘shall / must ’
	Non-maximum	<i>burde</i> ‘should / ought to’

Mere potential *kunne* ‘can’

(Boye, 2005: 64, see also Boye, 2001: 56)¹⁸⁷

The distinction between ‘non-maximum’ and ‘maximum’ force does reflect the intuitive strength difference between Danish *skulle* and *burde* as well as the intuitive strength difference between English *must* and *should*. This, I shall argue, does however not mean that the distinction between non-maximum and maximum force is the best way to capture these intuitive strength differences. In fact, I believe one should be cautious with proposing the inclusion of fine-grained force distinctions since – at least in the case of Danish and English – the intuitive difference in strength may also be accounted for in terms of different restrictions on the modal domain. That is, it appears that the difference between *burde* and *skulle* could amount to the different ways the propositions they admit into the modal domain are entertained rather than to different modal forces.

Consider (6.21) below, originally provided in Boye (2001: 48) to illustrate agonist-external force modals. Here, they will serve as minimal pairs in the quest for demonstrating that the intuitive strength differences between *burde*, *skulle* and *måtte* can be accounted for in terms of different restrictions on their modal domain:

¹⁸⁷ The glosses are my own responsibility.

- (6.21) a. Jeg bør cykle på cykelstien
 ‘I ought to ride in the bicycle lane’
- b. Jeg skal cykle på cykelstien.
 ‘I shall ride in the bicycle lane’
- c. Jeg *må* cykle på cykelstien.¹⁸⁸
 ‘I must ride in the bicycle lane’ (Boye, 2001: 48)

Burde, *skulle* and *måtte* all make a reference to a modal source located outside the subject referent (Boye, *ibid.*). As Boye (*ibid.*) writes, “*the possibility of being run down is a physical matter of fact, and the Highway Code is a social matter of fact*”. Both sources are located external to the subject referent, and force her to ride on the bicycle lane in (6.21a-c) (*ibid.*). Following my native speaker intuitions, it appears to me that *må* in (6.21c) makes a reference to the possibility of being run down, while (6.21a-b) with *bør* and *skal* make a reference to the highway code. This is what makes (6.21c) intuitively stronger than the other two; it makes a reference to the physical circumstances rather than a code. Whereas physical realities may be harder to ignore, social codes and norms can be broken. A partial force towards actualization may seem stronger if it comes from the physical circumstances than if it comes from e.g. the law or moral considerations. It seems to me that Danish *måtte* – on its root use – may take D-factual on its root interpretation. *Skulle* and *burde* – on their root interpretations – take the regulatory domains, and this is why they seem weaker than *måtte*. Boye (2001: 49) himself states that *burde* implies morality, and that morality is not a source of maximum force. It seems to me that root *burde* could in fact be lexically restricted to partial force (just like *måtte*) and to a domain of morality (unlike *måtte*). Due to the nature of morality, the modal strength of *burde* appears weaker, because the force merely comes from moral considerations and not the physical circumstances or the traffic law. *Skulle* appears to be in between *måtte* and *burde*, and this is explained if we assume that *skulle* (in its root-sense) relates the predication to social regulations. Given the context, (6.21b) is easily interpreted such that the propositions representing the traffic law constitute the modal domain of *skulle*. Violation of social regulations may result in social sanctions (e.g. a fine from the police or angry shouts from people

¹⁸⁸ The form *må* is italic here in order to reflect stress. Danish *må* can also be used to express permission comparable to English *may*. This is not the interpretation intended in this example, and one way a speaker of Danish can aid the disambiguation is by means of stress, which will result in a dynamic *partial* force interpretation.

on the road), and therefore *skulle* appears stronger than *burde*, because it is not as clear that violation of morality will result in equally uncomfortable sanctions – unless, of course, a bad consciousness is considered worse than social or legal sanctions.

The intuitive difference in strength, I propose, is thus merely a consequence of inferences based on assumptions about physical circumstances' general potential of being more serious, while social and moral regulations may be easier to violate. The intuitive difference in strength among the examples in (6.21) are hence due to pragmatics rather than different lexical restrictions on force, because cultural and encyclopaedic assumptions about the propositions in the modal domain may affect the intuitive strength. The social restriction on *skulle* is narrowed down from the domain of regulations and picks out the law in (6.21b) while the moral restriction on *burde* in (6.21c) is narrowed down to consideration for other people. On the basis of this brief and superficial analysis of root uses of Danish *måtte*, *skulle* and *burde*, there is no need to assume a more fine-grained division of modal forces beyond the division into neutral and partial. This is so because the source referred to by *måtte*, *skulle* and *burde* push equally hard for the actualization of the predicational content, while the propositions admitted in their respective modal domains may not be seen as equally influential on the subject referent's choice to use the biking lane.

The brief analysis above was intended to show that intuitive differences in strength among modal expressions do not need to be a consequence of different lexical restrictions on modal force; it may just as well be a consequence of different restrictions on the modal domain in interaction with cultural and encyclopaedic assumptions. Also when the same modal expression appears to vary in strength according to the context, this seems to be connected to contextual assumptions about the propositions in the modal domain. Consider (6.22) below:

(6.22) You must give me your lunch money.

Context 1:

Uttered by the school bully to an addressee who is alone, younger and physically smaller.

Context 2:

Uttered by a first grader to a ninth-grader.

In context 1, the addressee will probably feel a greater need to give his lunch money to the speaker than the addressee in context 2. The school bully is feared, and when she is the source of the actualizational force, the actualization arguably appears more urgent to the addressee. The first

grader in context 2 may indeed intend to convey – and succeed in doing so – that the ninth-grader needs to give her his lunch money. This is nevertheless unlikely to be perceived as very necessary by the ninth-grader, but this does not mean that he does not understand the intention to present the actualization as very urgent. The propositions constituting the modal domain in either context in (6.22) are entertained as factual circumstances. In context 1, some of these propositions may be ‘the speaker is hungry, the speaker wants to save her own money’ etc., and these propositions are entertained as factual circumstances yielding partial force towards the actualization of ‘addressee give his lunch money to speaker’. In context 2, the propositions in the modal domain may be similar, but here the hungry person who wants to save her own lunch money is the first-grader and the addressee is the ninth-grader. The felt necessity of the actualization simply varies because the addressee in context 1 may get beaten up if he fails to comply with what the speaker perceives as necessary, while the addressee in context 2 does not. In context 1, the power relations are mutually manifest to the interlocutors and the school bully can expect contextual assumptions about these relations and the threat of violence to be easily accessible to the addressee. In context 2, the first-grader hardly intends the addressee to access assumptions about an immediate threat of violence. She may though intend other mutually manifest assumptions about power and consequences to be accessed in the interpretation of her utterance. Perhaps it is mutually manifest that she knows that the addressee cheated on a test. Given that the risk of the speaker telling on the addressee is perceived as less pressing or easier to mitigate than the risk of immediate violence in context 1, the intuitive strength of the modal force in context 2 will be lower than in context 1.

On this analysis, it is the mutually manifest assumptions about the entities in the modal domain – rather than varying degrees of partial force – that change the intuitive strength of the statement in the respective contexts. Example (6.22) thereby shows that pragmatic variation in the intuitive strength of a modalized statement may be assigned to the modal domain rather than the modal force. It is therefore not unlikely that also encoded restrictions on the modal domain can affect how strong a statement with that modal feels. I therefore propose that intuitive differences in strength among modal expressions is not per default reflected in the lexical semantics in terms of a specific fine-grained nuance of modal force. Rather, the formation of a semantic proposal should look carefully at the properties of the modal domain admitted by the given modal, as these may explain the perceived strength difference among modal expressions like *måtte*, *skulle* and *burde*. I shall therefore maintain that – at least for the modals considered in the present study – no

further division among degrees of modal force than those in Table 6.3 are necessary to the formation of modal semantic proposals.

6.4.3 The root-epistemic distinction

6.4.3.1 Reflecting the distinction

As it appears from Chapter 5, some Uummarmiutun modals, e.g. *lla* ‘can’ and *huk* ‘inner force’, are restricted to root meanings, while others, e.g. *hungnaq* ‘probably’, are restricted to epistemic meanings. One of the expressions under investigation, i.e. *řukřau* ‘should’, turns out to be on the path of developing epistemic – more specifically evidential – meaning in addition to its root meaning. The epistemic meaning occasionally associated with sentences with *řukřau* is nevertheless not part of the encoded meaning of *řukřau* in Uummarmiutun as the language is today, judging from the morphosyntactic evidence (see data (5.90) (5.91) (5.92)). All the Uummarmiutun modals constituting the focus of the present thesis are therefore lexically restricted to either root or epistemic modal meaning. The question is now how to reflect these restrictions in the semantic proposals.

Papafraou (2000) explains the difference between root and epistemic interpretations of modals in terms of the difference between descriptive and metarepresentative use of propositions in the modal scope and domain. Language users are in general capable of using contextual cues to distinguish between descriptive and interpretive use. Irony is a case in point. Consider the example in (6.23):

- (6.23) Context: Speaker and hearer went for a picnic and it starts to rain.
Utterance: It’s a lovely day for a picnic, indeed.
Interpretation: The speaker thinks it would be ridiculous to believe/assert that it’s a lovely day for a picnic.

(Adapted from Sperber and Wilson, 1986/1995: 239)

In relevance theory, irony is an instance of interpretive (i.e. metarepresentative) use, where the utterance – e.g. *It’s a lovely day for a picnic, indeed* in (6.23) – is used to represent a representation which the speaker attributes to someone other than the speaker, or to herself at an earlier time

(Sperber and Wilson, 1986/1995: 239; Wilson and Sperber, 2012). The relevance of the utterance in (6.23) does not lie in the description of the state of affairs, but rather in the speaker's rejection and scolding attitude towards the hypothetical belief. An utterance of (6.23) may obviously also be used descriptively, i.e. to describe the situation that it is a lovely day for a picnic. When (6.23) can be used literally as well as ironically, it appears that hearers are capable of using contextual cues to determine whether the speaker intends to use the utterance descriptively or interpretively (Sperber and Wilson, 1986/1995). With regards to the choice between a root and an epistemic interpretation of a modal, this corresponds to whether the speaker intends the proposition in the scope – as well as the propositions in the modal domain, since only propositions of the same type can entail or be compatible with each other (Papafragou, 2000) – to be a description or a metarepresentation.

Papafragou (2000) does not specify directly in the semantic proposals whether or not the given form may be used to express root as well as epistemic interpretations or whether it is limited to root interpretations. Nevertheless, since any utterance or proposition may be used descriptively or interpretively, it follows that epistemic as well as root interpretations of a given modal expression are possible unless otherwise is noted. This seems suitable in the case of the root-epistemic overlapping modals *may*, *must* and *should*. *Can* however only allows root interpretations. Papafragou (2000) argues that it follows inherently from the semantic restriction on *can* to the factual domain that only root interpretations are available for this item. That is, the factual domain is inherently a domain of *descriptions*. As for *must* and *may*, which are lexically unspecified with respect to domain, it follows from the context-specific saturation whether the interpretation is epistemic or root. Root interpretations occur when the domain is saturated to e.g. the factual domain, and the propositions in the domain as well as the proposition in the modal scope are entertained as descriptions of factual states of affairs. Epistemic interpretations occur when the modal domain is saturated to beliefs, which are by default metarepresentations (see §6.3.3; Papafragou, 2000). *Should* also allows for root as well as epistemic interpretations. On either interpretation, the domain is restricted to the normative domain (as predicted by the semantics), which comes out as a domain of expectations on epistemic interpretations according to Papafragou (2000: 75). A lexical restriction on D-normative is thus on Papafragou's (2000) account compatible with the expression of epistemic meaning as well as root meaning. It seems intuitive that an expression may be used descriptively to yield the root interpretations and interpretively to yield the

epistemic interpretations, and that the domain restriction comes out slightly differently e.g. as a notion of norms or a related notion of expectations. Papafragou’s (2000) account of *should* therefore correctly predicts that *should* allows for epistemic as well as root interpretations.

The framework might work for the English modals under investigation in Papafragou’s (2000) study, but when modals from other languages are taken into account, we need a way to block metarepresentative use of the modal scope in the semantics for modals that only allow root interpretations. On Papafragou’s (2000) model as it stands now, not all root-only modals can be successfully described as such through recourse to inherent properties of their domains. That is, in the absence of a lexical restriction to descriptive use, the semantic proposals for some root-only modals will falsely predict that their meanings also cover epistemic modality. The remainder of the section discusses options for reflecting restrictions on root meaning in a semantic proposal when necessary.

In Gitksan, the deontic modal *anook* would in Papafragou’s (2000) framework be described as restricted to D-normative. However, unlike English *should*, *anook* does not permit metarepresentative (epistemic) use:

			POSSIBILITY	(WEAK) NECESSITY
CIRCUMSTANTIAL	VERBS / PREDICATIVE	PLAIN	<i>da'akhlxw</i>	<i>sgi</i>
	PARTICLES	DEONTIC	<i>anook</i>	
EPISTEMIC	SECOND-POSITION	PLAIN	<i>ima('a)</i>	
	CLITICS	REPORTATIVE	<i>gat</i>	

(Matthewson, 2013: 276)

There is obviously a difference between *anook* and *should* in terms of modal force; the former is restricted to neutral force whereas the latter is restricted to partial force. Nevertheless, if we expect that *should*'s restriction to D-normative predicts that *should* covers epistemic meaning, we should expect the same for Gitksan *anook* (and for Uumarmiumtun *ruk'fau*, see Chapter 5, §5.3.1). But *anook* does not permit epistemic use, and hence we need to specify in the lexical semantics for a modal like *anook* that it is lexically restricted to root meaning. The apparent need to include in the semantic representation that a given modal is restricted to root interpretations may be met within Papafragou’s (2000) framework simply by adding a parameter pertaining to restrictions on how the

proposition in the modal scope is used. Because root modal meaning corresponds to descriptive use, the restriction on root modal meaning may be reflected within Papafragou's (2000) model as a restriction on descriptive use of the proposition in the modal scope, as in (6.24a) below. Another option is to render the root restriction as a restriction on the use of the propositions in the modal domain as in (6.24b). As Papafragou (2000: 42) writes, only propositions of the same type and used in the same way can entail or be compatible with each other. Therefore, a restriction to e.g. descriptive use of the propositions in the modal domain inherently predicts that the proposition in the modal scope is restricted to descriptive use and vice versa.

(6.24)

- a. *anook* p-**descriptive** is compatible with D-normative
- b. *anook* p is compatible with D-normative-**descriptive use**

(6.24a-b) both successfully predict that *anook* is restricted to root modal meaning. However, (6.24b) seems to be more in accordance with Papafragou's (2000) original account, where the use of the propositions in the modal scope appears to be closely tied to how the propositions in the modal domain are entertained. Recall that when the domain of *must* is saturated to beliefs, it follows inherently that the proposition in the modal scope is used as a metarepresentation, because beliefs are metarepresentations by default. The decision to reflect restrictions to root modal meaning as a restriction on descriptive use of the propositions *in the modal domain*, i.e. as in (6.24b), is moreover in accordance with existing hypotheses about the interpretation of modal statements. Following Papafragou (2000), part of interpreting a modal is to decode its meaning by accessing an assumption about 'what' the proposition is related to, e.g. whether it is related to (someone's) desires, a set of beliefs etc. Modal meaning is relative (e.g. van der Auwera, 1981: 81), and assumptions about 'what' the proposition in the modal scope is related to is a crucial component in the process of interpreting a modal statement (see also e.g. Groefsema, 1995; Nicolle, 1996). For this reason, I propose that restrictions on root meaning are reflected in a semantic proposal as restrictions on the use of the propositions *in the modal domain* as in (6.24b), rather than as restrictions on the use of the proposition in the modal scope.

It is not only modals taking the normative domain that vary with respect to root-epistemic overlap. Also modals used to express desirability ('bouletic modality') vary regarding whether they

are limited to root use or whether they permit epistemic (including evidential) uses. An example of an overlapping desirability modal is German *wollen* ‘want, hearsay’. *Wollen* takes the desirability domain on its root – i.e. descriptive – uses, as in (6.25), while it also allows epistemic – i.e. metarepresentative uses – as in (6.26):¹⁸⁹

(6.25)

- a. Sie will ins Kino gehen.
 sie will in - s Kino gehen
 3.SG.FEM.NOM want.to in - ACC cinema go
 ‘She wants to go to the movies’.
- b. Sie will im Lotto gewinnen.
 sie will i - m Lotto gewinnen
 3.SG.FEM.NOM want.to in - DEF.DAT lottery win
 ‘She wants to win in the lottery’ (Öhlschläger, 1989: 166)¹⁹⁰

(6.26)

- a. Emil will glücklich gewesen sein
 Emil will glücklich gewesen sein
 3.SG.MASC.NOM claim.to happy be.PERF be.AUX
 ‘Emil claims to be happy.’ (Öhlschläger, 1989: 233)¹⁹¹
- b. Er will eine Mosquito abgeschossen haben.
 Er will eine Mosquito ab - ge - schoss - en haben
 3.SG.MASC.NOM claim.to INDEF Mosquito down - PERF - shoot - PERF AUX
 ‘He claims to have shot down a Mosquito (plane)’. (Hammer in Palmer, 2001: 9)¹⁹²
- c. Er will Schauspieler gewesen sein.
 Er will Schauspieler gewesen sein
 3.SG.MASC.NOM claim.to actor be.PERF be.AUX
 ‘He is supposed to have been an actor (so he claims)’ (Eide, 2005: 32)¹⁹³

In (6.25), *wollen* expresses the root modal meaning ‘bouletic’ modality. On the present account, this leads to the hypothesis that *wollen* encodes a restriction on the modal domain such that it

¹⁸⁹ *Wollen* can furthermore be used to express a ‘future’ meaning (Öhlschläger, 1989). I shall not go deeper into this matter here.

¹⁹⁰ Translation and glossing are based on Öhlschläger’s (1989: 166-7) descriptions.

¹⁹¹ Translation and glossing are based on Öhlschläger’s (1989: 233-4) descriptions.

¹⁹² Segmentation and glossing is my own responsibility.

¹⁹³ Segmentation and glossing is my own responsibility.

contains propositions entertained as desirable. The epistemic modal meaning expressed by *wollen* in (6.26) is that the proposition in the modal scope represents the subject referent's claim (e.g. Öhlschläger, 1989: 233-234; Palmer, 2001: 42; Eide, 2005: 32). This amounts to a metarepresentational use of the proposition; it is used as a claim, and hence a mental object rather than a first-order description. That is, *wollen* would, on Papafragou's (2000) account, be restricted to the desirability domain and when the modal scope is used as a metarepresentation, this comes out as the subject referent's desired claims. *Wollen*'s restriction to the desirability domain – plus a restriction on partial force – therefore appears to predict the meaning and use of *wollen*, given the data presented above: there is no restriction on use of the propositions in the modal domain (and thereby also no restriction on how the proposition in the modal scope is used, as long as it corresponds to the use of the propositions in the domain), and hence root as well as epistemic (more specifically evidential) interpretations are available. Other modals restricting the desirability domain, however, do not appear to permit epistemic use. English *want* is a case in point, and so are Persian *bešavad* and *betâvan*. Persian *bešavad* and *betâvan* as described by Rahimian and Vahedi (2010) are restricted to the desirability domain, but they do not allow epistemic uses – only root interpretations. This variation among desirability modals with respect to whether or not they allow epistemic use is another reason to reflect in the semantic descriptions of certain modals that these are restricted to descriptive use only. As for English *want* and Persian *bešavad* and *betâvan*, these would all need a restriction on the propositions in their modal domain to propositions used as *description* of desires.

So far in this sub-section, I have argued that restrictions on root modal meaning – when applicable – are appropriately reflected in the semantic proposal as a restriction on how the propositions in the modal domain are used. That is, restrictions on use of the propositions in the modal domain seem to come in addition to restrictions on how these propositions are entertained. The question is now whether these two restrictions are to be seen as separate parameters in the lexical semantics, or whether they may in fact be two sides of the same coin. I propose that the latter is the case, and that non-overlapping modals therefore do not by default need an extra restriction on use in their semantic representations, other things being equal.

There are some indications in Papafragou's (2000) original proposal of an interconnection between how the propositions in the domain are used and how they are entertained. Recall that according to Papafragou (2000), the domain of propositions entertained as beliefs is inherently a

domain of propositions used as metarepresentations, and the domain of propositions entertained as facts is inherently a domain of propositions used as descriptions. When *can* is lexically restricted to D-factual on Papafragou's (2000) account, this restriction predicts that only root interpretations are available for *can*. And when the domain of *must* is saturated to D-belief, epistemic interpretations occur (Papafragou, 2000). It thus appears that D-factual and D-belief are inherently connected to a certain type of use of the propositions, namely descriptive use and metarepresentative use respectively. The normative domain seems to be the only domain occurring in Papafragou's (2000) semantic proposals where the propositions may be used in both ways; *should* is lexically restricted to D-normative and may be used to express root as well as epistemic meanings. However, this domain actually seems to have a slightly different character depending on whether the propositions in it are used as descriptions or as metarepresentations. It is interesting to note that Papafragou (2000) does explain the epistemic interpretations of *should* along the lines of the speaker's beliefs about the normal/expected course of events (2000: 74-75). It thus appears that the truth of the proposition in the scope of epistemic *should* is related to a domain of beliefs about expectations, and hence that the domain of *should* alternates between a domain of descriptions of norms on the root interpretations and a domain of beliefs about expectations on the epistemic interpretations. From this it should follow that a domain lexically restricted or saturated to D-normative conflates with descriptive use, now that Papafragou (2000) explains the epistemic uses of *should* in terms of beliefs and expectations.

If restrictions on how the propositions in D are entertained conflates with how they are used, the semantic proposal for a modal like *anook* – or Uummarmiutun *řukřau* – only needs to include a restriction on D-normative in addition to force. In other words, a restriction on *use* of the propositions in the modal domain would be redundant, because descriptive use follows inherently from the restriction on D-normative. This position obviously warrants some reconsideration of English *should*; if the normative domain is inherently a domain of descriptively used propositions, then a restriction to D-normative is too restrictive in a semantic proposal for *should* because it rules out epistemic uses. In fact, the proposal that all domains are inherently domains of either descriptions or metarepresentations could be problematic for root-epistemic overlapping modals in general, because a lexical restriction on how the propositions in the domain are entertained is also a restriction on *either* root *or* epistemic meaning. In §6.4.4.3 I shall argue that root-epistemic overlapping modals are cases of what I shall call 'split polysemy'. As we shall see, this split

polysemy account can easily capture that *should* takes a domain of ‘beliefs about expectations’ on its epistemic interpretations. One sense is D-normative, and one sense is D-expectations. These two senses are obviously connected, and hence the form *should* is involved in a split polysemous entry rather than in two separate homonymic entries. But before we move on to such discussions of the representation of modal expressions in the mental lexicon, one more issue pertaining to domain restrictions needs to be addressed.

6.4.3.2 Other restrictions on the modal domain

As noted in §6.3.3.3, it is interesting to observe that some modals appear to encode further restrictions on the modal domain, more specifically a restriction on the attribution of the desires (Persian *bešavad* and *betâvan*, German *wollen*) or claims (German *wollen*) to the subject referent. Papafragou (2000) does not include restrictions on attribution in her account, probably because none of the modals she discusses encode such restrictions. The inclusion of restrictions on attribution in the original framework should nevertheless be unproblematic: following Wilson and Sperber (1988), Papafragou points out in her description of the desirability domain that “[...] *an individual can entertain a description of a state of affairs in a world desirable from that individual’s or someone else’s point of view*” (2000: 42). Let us use Persian *bešavad* and *betâvan* as illustration. Given the observations made in Rahimian and Vahedi (2010: 106-8), *bešavad* and *betâvan* seem to restrict the attribution of the desires to the speaker and the interlocutor respectively. Recall that Rahimian and Vahedi (2010) do not include restrictions on attribution in their semantic proposals. In the text, however, they point out that *bešavad* is limited to the desires and wishes *of the speaker*, while *betâvan* is limited to the desires, wishes and plans *of the interlocutors* (ibid). If these limitations are part of the conventionalized meaning of the respective expressions as seems to be the case judging from Rahimian and Vahedi (2010: 106-8), this may be reflected in the semantic proposal as restrictions on attribution of the propositions in the modal domain:¹⁹⁴

¹⁹⁴ The restriction on neutral force is in accordance with Rahimian and Vahedi’s (2010) semantic proposals for the two expressions.

(6.27)

<i>bešavad</i>	D-descriptive-desires	attribution: speaker	neutral force towards p
<i>betâvan</i>	D- descriptive-desires	attribution: interlocutors	neutral force towards p

As we shall see in Chapter 7, attribution of the propositions in the modal domain come in handy in the formation of the semantic proposal for Uummarmiutun *huk*. As demonstrated in Chapter 5, §5.3.3.2, *huk* is not lexically restricted to desirability, but the source appears to be restricted to something internal to the subject referent. It is therefore possible that *huk* encodes a restriction on attribution of the propositions in the modal domain. This would capture the difference between *huk* and modals like *bešavad*, *betâvan*, *wollen* and *want* which seem to restrict the modal domain to propositions entertained as desires, whereas *huk* merely restricts attribution.

6.4.4 Lexical semantic structure of root-epistemic overlapping modals

6.4.4.1 The polyfunctionality of modals

Papafragou (2000) proposes unitary semantics for all modals in the scope of her study. On Papafragou's (2000) account, the domain of some root-epistemic overlapping modal expressions, i.e. *may* and *must*, needs saturation. The result of the saturation may be to the domain of beliefs or the domain of facts or regulations or in principle, as it seems to me, any other domain given that the domains of *may* and *must* are lexically unrestricted. The present section explores a hypothesis where root-epistemic overlapping modals are cases of what I shall call 'split polysemy' followed by arguments that if this hypothesis is endorsed, a greater level of descriptive clarity can be reached for at least some modals. As the reader has probably noticed, this issue is strictly speaking not urgent to the formation of semantic proposals for the Uummarmiutun modals in the focus of the present study, as all of them are lexically restricted to either root or epistemic meaning. One of the Uummarmiutun root modals *řukřau* 'should' nevertheless seems to be on the route of conventionalizing epistemic meaning, more specifically hearsay evidential meaning. The framework used for describing *řukřau* today should therefore be ready for capturing root-epistemic overlap if *řukřau* lexicalizes this type of polyfunctionality in the future. Moreover, the question of how to deal with root-epistemic overlapping expressions does deserve some attention in any account of modal meaning, now that modals in several languages of the world, e.g. Indo-European

languages, do display root-epistemic overlap. In what follows I shall make use of well-studied English modals in the development and justification of the proposal. The application and fully-fledged analysis on *řukřau* is saved for Chapter 7, §7.2.

As noted throughout the previous chapters, modal expressions are highly polyfunctional. (6.28-6.30) below illustrate how the English modals *may*, *should* and *must* are ambiguous between at least two meanings each, namely epistemic modality as in the a-interpretations, and deontic modality – a sub-type of root modality – as in the b-interpretations:

(6.28) Mary may leave tomorrow.

- a. It is possible that Mary leaves tomorrow.
- b. Mary is permitted to leave tomorrow.

(6.29) John should be at work.

- a. It is probable that John is at work.
- b. John is obliged to be at work.

(6.30) Ann must be in court.

- a. It is certain that Ann is in court.
- b. Ann is obliged to be in court. (Groefsema, 1995: 53)

Such polyfunctionality opens the question whether a root-epistemic overlapping modal like *may*, *should* or *must* is best described as having one lexical entry subsuming the root as well as the epistemic meaning, or whether the form is associated with several lexical entries, e.g. one for the root meaning and one for the epistemic meaning. Given that a certain modal expression regularly varies between contributing root or epistemic meaning, both meanings must be conventionalized and the semantic proposal for that modal should predict that it may be used to express both these meanings. Even if the root-epistemic distinction is understood as a distinction between descriptive and metarepresentative use of the proposition in the modal scope, the language user apparently makes a choice between the root and the epistemic interpretation when the given root-epistemic overlapping modal is used in an utterance.

Questions pertaining to the lexical structure of a modal form are not only relevant to the root-epistemic overlapping modals. As illustrated in example (6.31), the root modal *can* is ambiguous between at least two root meanings, namely dynamic modality in (6.31a) and deontic modality in (6.31b):

(6.31) Peter can sing.

- a. Peter is able to sing, he knows how to sing.
- b. Peter is permitted to sing now.

As for the polyfunctionality of a root modal like *can*, this was already addressed in §6.3.3 in the outline of Papafragou's (2000) account. Here Papafragou's (ibid.) unitary semantic proposal was shown to successfully capture the various interpretations yielded by *can* in cases like (6.31). A unitary semantics for root-modals like *can* hence seems plausible. The representation of root-epistemic overlapping modals in the lexicon may, on the other hand, be worthy of a discussion.

The difference between root and epistemic modal meaning is notionally greater than the distinction among root modal meanings: epistemic modal meanings are concerned with verification of the predicational content, whereas root modal meanings are concerned with actualization of the event (see Chapter 3 and Boye, 2005). The notional difference between verificational force and actualizational force is more apparent than the notional difference between different types of actualizational force, such as physical, social and desirability. Root and epistemic modal meanings moreover differ in semantic and syntactic scope. Recall that Boye (2005; 2012a) argues that root modal meanings scope over states of affairs, while epistemic modal meanings scope over propositions. On Papafragou's (2000) account, all modal meanings relate propositions to each other, but while root modal meanings relate descriptions to each other, epistemic modal meanings relate metarepresentations to each other. A fundamental distinction between root and epistemic modal meaning is thus acknowledged and reflected in cognitive semantic (Boye, 2005, Boye, 2012a) as well as in relevance-theoretic (Papafragou, 2000) accounts of modality. It is also argued in the literature that root and epistemic meaning respectively map onto different syntactic structures (e.g. Hacquard, 2011), and in some languages certain syntactic structures are in fact restricted to root only interpretations (Hansen, 2014, and references therein). In Romanian, for instance, the necessity modal *a trebui* (3rd person singular) can express root as well as epistemic modal meaning

in combination with a subjunctive complement marked for subject agreement. If the complement is non-finite, on the other hand, only the root modal interpretation of *a trebui* is available (Cornillie et al. in Hansen, 2014: 102). And as we saw in Chapter 5, Ummarmiutun modals permit different relational orders in the verbal word depending on whether they encode root or epistemic modal meaning.

The observation that a linguistic item yields different interpretations depending on the syntactic construction is however not, in my view, sufficient for claiming that the given phonological form is associated with two (or more) separate lexical semantics. First of all, a linguistic expression may encode a single meaning while allowing for several syntactic distributions. The form *frankly* may for instance be used to modify the sentence as in (6.32a) or to modify the verb as in (6.32b) without requiring separate lexical semantics (Ifantidou, 2001):

- (6.32) a. Frankly, I'm bored. (Ifantidou, 2001: 97)
b. He spoke frankly.

Furthermore, while root and epistemic interpretations may indeed map on to different syntactic structures on a deeper level of analysis, this difference is not always visible on the surface structure and hence not available to the addressee. An utterance of e.g. *He must be at home* would be indeterminate between a root and an epistemic meaning if uttered out of context, and hence it is doubtful that syntactic projections alone serve the disambiguation process. Rather, as Papafragou (2000) concludes, the “[g]rammatical features, such as the aspectual profile of the complement, typically interact with contextual considerations to favour one or the other interpretation of a modal expression [...]” (ibid.: 105). Nevertheless, Coates (1983) does manage to observe differences in terms of syntactic associations and stress patterns which vary according to whether *may* is used to yield a root or an epistemic interpretation (ibid.: 144). Such finding offers support to a hypothesis that root and epistemic interpretations respectively may be associated with certain syntactic and prosodic properties. If root and epistemic meanings differ in terms of scope and syntax, it would make sense if a root-epistemic overlapping form would collect these different properties separately along with the root and epistemic sense respectively.

As for the apparent difference between root and epistemic modal meaning, most works on modality seem to agree that the notions of root and epistemic modality are sufficiently related to

rule out that linguistic items displaying root-epistemic overlap – such as English *may*, *should* and *must* – are cases of homonymy. The questions worth asking in relation to the lexical structure of root-epistemic overlapping modals is therefore whether the given phonological form with root-epistemic overlap is connected to one semantic meaning which is adjusted in context – the unitary analysis – or whether it is conventionally connected to several related senses – a polysemy approach. I shall argue for the latter, and propose that root-epistemic overlapping modals are instances of what I shall call ‘split polysemy’ in order to distinguish their polysemous properties from other phenomena labelled as polysemy in the linguistics literature. The split polysemy proposal draws on Falkum’s (2015) conception of polysemy along with her recognition of how polysemous expressions may split into separate conceptual addresses as a result of the gradual conventionalization of routinized pragmatic inferences.

6.4.4.2 Polysemy

Groefsema (1995) and Papafragou (2000) use the term polysemy to refer to a form with distinct but related senses in need for disambiguation between those senses when it is used in an utterance. This type of polysemy is slightly different from Falkum’s (2011, 2015) notion of polysemy. Whereas Groefsema (1995) and Papafragou (2000) appear to view polysemous items as having entries with lists of senses among which the hearer needs to choose, Falkum (2011) seems to apply the term as a recognition of the plasticity of linguistic expressions, much in the sense of conceptual adjustment. This sub-section briefly outlines how Groefsema (1995) and Papafragou (2000) position their own accounts of modality in relation to their conception of polysemy before it gives an outline of Falkum’s (2011, 2015) more recent studies of polysemy. This leads up to the split polysemy proposal for root-epistemic overlapping modals in the next sub-section.

Groefsema (1995) distinguishes her own account of modals from what she calls ‘the ‘standard’ polysemy view’ where a modal expression is ambiguous between a certain set of defined meanings.¹⁹⁵ Groefsema’s (1995) ‘standard polysemy’ refers to the assumed property of a given linguistic item as having more than one related meaning among which the hearer needs to

¹⁹⁵ Note that what Groefsema (ibid) calls ‘standard polysemy’ is different from Falkum’s (2011) ‘polysemy’ which is used to acknowledge that meanings are plastic and hence we get various interpretations when an encoded concept is adjusted.

disambiguate. Groefsema (1995: 58) presents Sweetser's (1989)¹⁹⁶ account of modals as an intermediate position between the 'standard' polysemy view and her own monosemy view. Sweetser seems to receive this spot between 'standard polysemy' and 'monosemy' in Groefsema's (1995) paper for the following reason: Sweetser explicitly points out a relation between different interpretations of the root-epistemic overlapping modals and traces this relation to diachronic change, however without proposing unitary semantics for modal expressions. The 'standard' polysemy view reviewed in Groefsema (1995) is not to be confused with homonymy, as it is doubtful that there is any linguist who does not acknowledge a connection between the various interpretations of root-epistemic overlapping forms like *must* and *may*. When Groefsema (ibid.) differentiates between Sweetser's proposal and the standard polysemy view, this merely seems to be due to the fact that Sweetser explicitly acknowledges the connection between the interpretations of modals. Nevertheless, Groefsema (1995) rejects any account assuming that a modal needs to be disambiguated between certain concepts.¹⁹⁷ Papafragou (2000: 27) categorizes Sweetser's view of modals as the 'polysemy view'. Papafragou (ibid.) endorses Sweetser's acknowledgment of the systematic relation between root and epistemic uses of modals but does not accept that the metaphorical mapping among modal concepts can be compared to other cases of metaphorical mapping claimed to motivate lexical polysemy. Papafragou (2000: 27) states that as for perception verbs like *see* and *view*, the 'external world perception' meaning and the metaphorically mapped 'mental processes' meaning are more distinct than the senses claimed to be metaphorically mapped for modals. It is not clear to me that the meanings conventionalized for *see* and *view* are more distinct than the root and epistemic meanings conventionalized for e.g. *must* and *may*, which, as we have seen, display notional differences.

Falkum's (2015) paper 'On the how and why of polysemy: A pragmatic account' considers two main types of approaches to the phenomenon of polysemy; the rule-based approaches and the

¹⁹⁶ Groefsema (1995) does refer to Sweetser (1989), but it appears that the work she is referring to is Sweetser's (1990) book.

¹⁹⁷ One of Groefsema's (1995) arguments for rejecting this is that she assumes that there are indeterminate cases, i.e. cases where the modal expression cannot be disambiguated. While this appears to be true for some root meanings, Groefsema (1995) does not provide any example where a modal expression is indeterminate between a root and an epistemic meaning. Given Coates' (1983) corpus study, indeterminacy between root and epistemic meaning is limited to a very few cases in formal contexts only. In informal contexts, Coates (1983: 145) observes, a root-epistemic overlapping form is always disambiguated between *either* a root *or* an epistemic interpretation rather than yielding an interpretation with a 'merged' root-epistemic concept. Coates' (1983) corpus study thereby suggests that indeterminacy between root and epistemic meaning is rare.

inference-based approach. On rule-based approaches, the context sensitivity of the lexical item is built into the linguistic system, whereas the inference-based approach assumes that pragmatic processes play a role in the interpretation of polysemous items. Falkum (ibid.) argues along with Carston (2002) that the inference-based approach is most suitable for understanding polysemy, among other things because the rule-based account is unable to account for the interpretive flexibility involved in the interpretation of metonymy (ibid.: 87). On rule-based accounts of polysemy, the given context-specific interpretation is predicted by fixed lexical inference rules within the given item, and for this reason they fail to account for cases where an interpretation falls between the results generated by the rules. As an example of a lexical inference rule, Falkum (ibid.) mentions the UNIVERSAL GRINDER, which was originally proposed by Pelletier (see ibid.), and considers the count-mass interpretations of *rabbit* in (6.33):

- (6.33) a. There was rabbit all over the highway. ('rabbit stuff')
 b. Steven had rabbit for dinner. ('rabbit meat')
 c. The model wore rabbit on the catwalk. ('rabbit fur') (Falkum, 2015: 87)

This lexical rule UNIVERSAL GRINDER creates a mass noun interpretation where the referent has the properties of being an unindividuated substance from a count noun – e.g. *rabbit* – denoting a physical object (ibid.). On this rule-based approach, Falkum (2015) explains, the lexicon is thought to contain sub-cases of the universal grinder rule, e.g. meat-grinding and fur-grinding, which generate the interpretations in (6.33a-c). While the idea about lexical rules, as Falkum (ibid.: 87) notes, avoids the listing of predictable senses in the lexicon, it seems to me that it merely replaces the list of senses with a list of rules. Moreover, as Falkum (ibid.) argues, it fails to capture the interpretive flexibility of *rabbit* in cases like (6.34) below, where *rabbit* can also be understood as a) 'rabbit odour', b) 'rabbit faeces', c) 'electronic rabbit calls', and d) 'rabbit tracks', if the appropriate contextual cues are mutually manifest:

- (6.34) a. Will a hamster bite if it senses rabbit on my hands? ('rabbit odour')
 b. [Biology teacher]: Rabbit is smaller than hare. ('rabbit faeces')
 c. [Hunter]: This time of year I prefer using rabbit ('electronic rabbit calls').
 d. Last winter, we discovered rabbit, moose and fox in our garden. ('rabbit tracks')
- (Falkum, 2015: 88)

The inference-based approach to polysemy for which Falkum (2015) advocates, assumes that pragmatic processes plus access to encyclopaedic information predict the interpretations of polysemous items. That is, the interpretations of polysemous items result from general pragmatic inference rather than lexical specific rules. On this approach, the interpretation of polysemous items is simply a matter of conceptual adjustment which leads to the formation of an ad hoc concept in accordance with the context and the principle of relevance. Assuming that the hearer accesses contextual assumptions anyway and forms a context for the interpretation of the utterance (this is after all an integral part of any utterance interpretation (recall §6.2.2-3)), it is reasonable to assume that she will also access encyclopaedic information regarding the concepts in the remainder of the utterance when she interprets *rabbit* in (6.33-6.34). The formation of the ad hoc concept – i.e. the context-specific interpretation of *rabbit* – thereby depends on decoding of the linguistic items plus mutual adjustment of their encoded meanings in accordance with available mutually manifest assumptions such as encyclopaedic information about ‘rabbit’, ‘winter’ and ‘garden’ (Falkum, 2015). Referring to scholars like Fodor and Lepore, Falkum (2015) points out that there is a close connection between ‘regular’ sense alternations – as the count-mass nouns alteration in (6.33) – and real-world regularities, and that “[...] *it seems reasonable to assume that the sense alternations (whether they are regarded as linguistic or not) have their origin in a number of highly regular and predictable states of affairs in the world*” (ibid.: 92). General world knowledge includes knowledge that there is an inherent relation between an animal and its meat or its fur (ibid.). Therefore, the general world knowledge of animals and the connection to their fur makes it easy for me to infer that a speaker who says *Seal is the only thing that will keep your hands warm in the winter* intends *seal* to refer to ‘seal fur’, even if it should be the case that I had never entertained the thought of seal *fur* before. The inference from the concept of ‘seal animal’ to ‘seal fur’ is activated by the context and encyclopaedic knowledge which is mutually manifest to the speaker and me. Falkum’s (ibid.) account thereby succeeds in predicting the context-specific interpretations of polysemous items by means of pragmatic processes already involved in the interpretation of utterances, and it accommodates the flexibility of the lexical items and allows for novel uses.

If we conceive of polysemy like Falkum (2015) does, then the root-epistemic overlapping forms can hardly be viewed as polysemous; after all, they are not nearly as flexible as e.g. *rabbit*. Rather, the root-epistemic overlapping forms alternate between exactly that; root and epistemic meaning. Given this, it is interesting to note, like Falkum (2015) does, that interpretations occurring

as ad hoc concepts at one stage of a language may become conventional at another stage. This conventionalization occurs due to frequent adjustment of the lexical meaning of an expression in a specific direction (ibid.: 92; see also Ariel, 2008). The result is that the sense which used to be accessed as an ad hoc concept now has acquired a conceptual address on its own:

Frequent activation of these inferential routines might lead to further conventionalisation of senses, and finally, in some cases, to lexicalisation. An example of this may be the mass occurrence of the noun *chicken* in English, whose meat sense seems conventional to the extent that it may have acquired a conceptual address of its own. Thus, in this case, it is possible that we have to do with two linguistically encoded senses of the noun, where one has developed as a result of frequent pragmatic adjustment of the other in a specific direction (Falkum, 2015: 92).

Falkum (2015) is mainly concerned with metonymy and the count-mass alternations, but her account may easily be applied to the root-epistemic distinction. Like the now easily available mass-interpretations of certain nouns, the epistemic interpretations of some modals may have become progressively more routinized and later on acquired their own conceptual address within the given lexical item which used to contain only one conceptual address, i.e. the root sense.

This explanation seems consistent with e.g. Bybee et al. (1994), according to whom epistemic uses of originally root-only modal expressions arise from metaphoric extension or from conventionalization of implicatures (ibid.: 196-197). In other words, a certain root-modal form has been used in contexts giving rise to epistemic interpretations so many times that a routinized pragmatic shortcut has been developed. To illustrate this, let us use an example from Bybee et al. (1994). Bybee et al. (ibid.: 198) report on a Middle English text *Sir Gaiwan and the Green Knight* where “[...] *may* is used to express root possibility in a context in which epistemic possibility is also implied”:

(6.35) 3e ar a sleeper ynslyze, þat mon may slyde hider

‘You are so unwary a sleeper that someone can sneak in here’ (Bybee et al. 1994: 198)

As Bybee et al. (ibid.) write, *may* is here translated into present day English with *can* to convey the root meaning. Nevertheless, this root possibility reading implies the epistemic reading, i.e. ‘someone can sneak in here’ implies that ‘someone may sneak in here’ in the given context (ibid.).

Bybee et al. (1994) report that one third of the examples with *may* in *Sir Gaiwan and the Green Knight* may be interpreted as either root or epistemic possibility, whereas the remaining two thirds are unambiguously root. The frequency of such cases in this one text, as Bybee et al. (ibid.) point out, “[...] suggests that the inferential mechanism is highly likely to be involved in this case of a shift to epistemic meaning” (ibid.: 198).

6.4.4.3. Root-epistemic overlap as split polysemy

As for the development of epistemic senses of originally root-only modals, I propose that these may have undergone a similar process as *chicken* has according to Falkum (2015): the root-only modal has been used in contexts where an epistemic sense is required so many times that the pragmatic route used in inferring this meaning has become routinized. Later on in the development of the language, the conceptual address has split into two separate conceptual addresses – stored under the same *lexical* address – such that the hearer homes in on the one that is in accordance with the principle of relevance rather than going through the inferences.¹⁹⁸ I propose that we call such cases ‘split polysemy’ in order to distinguish their polysemy from ‘general’ polysemy in the sense of Falkum (2015). As we saw above, expressions like *rabbit* allow for novel adjustments into ad hoc concepts as those accessed in the interpretations of (6.34). As for root-epistemic overlapping modals, on the other hand, the hearer has to home in on either a root *or* an epistemic sense. Expressions like *may* and *must* have therefore split into separate meanings rather than being flexible in the sense that pragmatic adjustment can lead to an in principle infinite range of ad hoc concepts. The definition of split polysemy is formulated below:

(6.36)

Definition of Split polysemy

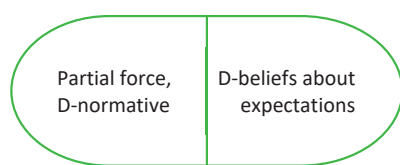
A lexical item is a case of split polysemy if it stores a cluster of senses, where each sense has its own conceptual address. Upon the interpretation of an utterance containing a split polysemous item, the hearer accesses the whole cluster and homes in on the sense in the cluster in accordance with the principle of relevance.

¹⁹⁸ Thanks to Robyn Carston (p.c. December 5th 2016) for pointing me in this direction.

It is important to emphasize that the epistemic sense of root-epistemic overlapping modals has acquired a *conceptual* address on its own – not a *lexical* address on its own. If we assume that the epistemic sense of e.g. *should* or *must* is stored on a lexical address separate from where the root sense is stored, expressions like *should* and *must* are stored in the mental lexicon in the same way as homonymous forms like *bank*. Therefore, the proposal is that root-epistemic overlapping forms are stored on the same lexical address which contains a cluster of separate meanings (Robyn Carston, p.c. December 5th, 2016). Illustrations of the meanings stored on the split polysemous lexical addresses of *should* and *must* are given in (6.37) below. An illustration of the monosemous *can* is provided in (6.38) for comparison:

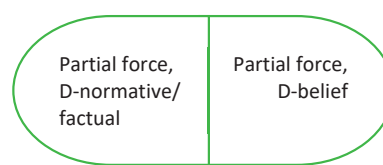
(6.37)

a. *The lexical address of English should:*



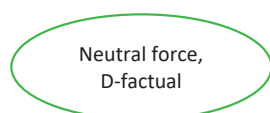
Split polysemy

b. *The lexical address of English must:*¹⁹⁹



Split polysemy

(6.38) *The lexical address of English can:*



Monosemy

¹⁹⁹ The accurate domain restriction on *must* on its root sense remains to be worked out. As it stands now, it predicts that *must* can take factual as well as normative domains, whereas it is not always necessary to home in on either of these in order to arrive at an optimally relevant interpretation. In this way, the modal domain restriction on the root sense of *must* is a super-domain consisting of the factual and the normative domains. Alternatively, we might propose that the root-sense of *must* is rather D-factual and argue that the obligation interpretations arise through processes similar to those proposed for permission interpretations of *can*. I shall not go deeper into the semantics of *must* here, as it is beyond the scope of the present thesis.

Recall Papafragou's (2000) description of *should* where the modal domain contains descriptively used propositions entertained as norms on the root interpretations, and the speaker's beliefs about the normal/expected course of events on the epistemic interpretations (2000: 74-75). This conventional alternation between interpretations is predicted by the split polysemous lexical address in (6.37a). Similarly, the proposed lexical address for *must* in (6.37b) predicts that *must* conventionally alters between root and epistemic interpretations, while the monosemous proposal for *can* in (6.38) with the restriction on D-factual predicts that only nuances of root interpretations are available. With the split polysemy proposal we do not have to wonder why some domains would change between descriptive use and metarepresentative use in order to explain that expressions like *should* has root-epistemic overlap. All domains are inherently descriptive or metarepresentative, and if a modal can take both types of domains, this regularity is reflected as split polysemy.

When the hearer accesses one of the meanings in the cluster denoted by a given split polysemous expression, she accesses the whole meaning cluster and homes in on one of the senses. The prediction is that most times, homing in will be necessary in order to use the interpretation of the expression to contribute to an optimally relevant interpretation of the utterance.²⁰⁰ Let us say, for instance, that A is looking for John and B says *He must be at home at this time*. If A does not home in on either the epistemic or the root sense of *must*, she will hardly be able to construct an optimally relevant interpretation, as a simple 'partial force' concept – at most times – is not enough to construct an optimally relevant interpretation of the utterance. A split polysemy analysis of root-epistemic overlapping modals reflects that these modals are conventionally associated with an epistemic sense and a root sense in the mental lexicon. And the separation of the root and the epistemic sense into individual conceptual addresses reflects their regularities more explicitly than Papafragou's (2000) monosemous semantic proposals.²⁰¹ The split polysemy account is nevertheless by no means incompatible with Papafragou's (2000) account of root meaning as

²⁰⁰ Note that this is in accordance with what Coates (1983) finds based on her extensive corpus study.

²⁰¹ The idea proposed here could seem similar to Depraetere (2014). Depraetere (ibid.) launches the term 'lexically regulated saturation' to explain the interpretation of modals and distinguishes this type of saturation from 'saturation with lexically open-ended valuation'. However, the term 'saturation' seems to be more appropriately reserved for cases where a parameter or slot needs to be filled, as was the original use of the term (see Carston, 2002). If an expression already includes restrictions on how to saturate, it seems more plausible that these restrictions are senses that may be directly accessed by homing in on them rather than assuming that the hearer first saturates a parameter, and then reaches a concept of either root or epistemic meaning (Robyn Carston p.c. December 5th 2016).

descriptive use and epistemic meaning as metarepresentative use: propositions entertained as beliefs are still inherently metarepresentations, while propositions entertained as facts or – as proposed above – norms or desires are inherently descriptions.

Additional reasons to hypothesize that root-epistemic overlapping expressions are better accounted for as cases of split polysemy than through a monosemous semantic proposal is that conventional restrictions on the root sense on some modals do not apply on their epistemic uses. On its root interpretations, English *may* is conventionally restricted to external location of the modal source. That is, on its root interpretations *may* is only used to relate the predicational content to something *external* to the agent, be it regulations or other external circumstances (Coates, 1983: 92, 139-140; van der Auwera, Kehayov and Vittrant, 2009: 278). This regularity should be reflected in a semantic proposal for *may* e.g. as subject-external attribution of the descriptions in the modal domain.²⁰² On epistemic uses, however, *may* hardly restricts external attribution. There is for instance hardly any notion of external attribution of the beliefs in the modal domain in the interpretation of an utterance like *She may have changed the battery*.²⁰³ If *may* is given a monosemous lexical semantics, we either a) fail to reflect the restriction on root interpretations to subject-external attribution, or b) falsely predict that external attribution is also part of epistemic uses of *may*. If the root and epistemic sense of *may* are stored on separate conceptual addresses, as illustrated in (6.39a) below, we can accurately capture the domain restrictions on its root sense without claiming that these also apply on epistemic interpretations. A similar problem occurs with attempts to form monosemous semantics for German *sollen* ‘should, hearsay’. Like root uses of English *should*, root uses of *sollen* include a restriction on modal force, namely partial force. On epistemic uses, however, Öhlschläger (1989) describes *sollen* as neutral in terms of ‘speaker attitude’, and hence a lexical restriction on force does not apply on epistemic uses of *sollen*. A description of *sollen* as a case of split polysemy, as in (6.39b) below, allows us to capture the force properties of the root sense without making the false prediction that also the epistemic – i.e. evidential – uses of *sollen* restrict degree of force:²⁰⁴

²⁰² This property of *may* is what distinguishes root *may* from *can*. Contrary to *may*, *can* may also be used to express ability and thereby relate the predicational content to an *internal* property of the agent (Coates, 1983; van der Auwera et al. 2009).

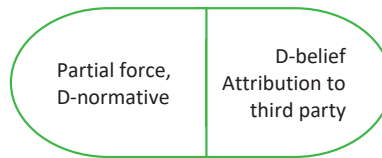
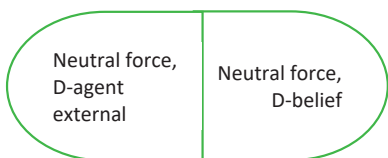
²⁰³ Unless of course the modal statement is embedded e.g. as in *Peter says that she may have changed the battery*, but then the external attribution is due to the embedding rather than lexical restrictions on *may*.

²⁰⁴ Epistemic uses of *sollen* may obviously be used to convey assumptions about the epistemic status of the proposition in its scope. Those assumptions are however not results of lexical restrictions on epistemic force. Epistemic *sollen*

(6.39)

a. *The lexical address of English may:*

b. *The lexical address of German sollen:*



A split polysemy account of root-epistemic overlapping modals hence allows for further specification of one of the stored senses, without falsely predicting that these restrictions also apply to the other senses, because the senses are stored on separate conceptual addresses.

As for the formation of semantic proposals for individual modals, it is an empirical question whether a given expression a) is monosemous, i.e. stored with one sense (e.g. a root sense in the case of *can*), b) is a case of split polysemy (e.g. *must*), or c) is on its route from storing one sense to conventionally storing another sense in addition to the sense that was initially stored (e.g. Ummarmiutun *řukřau*). A linguistic form allowing for epistemic as well as root interpretations may synchronically reside in various places on the routinization-conventionalization path. Both senses may be conventionalized (the b-types), or the epistemic uses are not (yet) conventionalized to the extent that two conceptual addresses are stored along with the phonological form (the c-types). How the latter, i.e. the c-types, should be rendered in the lexicon is an issue that pertains to any attempt to provide synchronic descriptions of linguistic conventions, because it may be difficult to determine exactly *how* conventionalized a meaning is. Put differently, it may be hard to determine whether a certain frequent interpretation is arrived at through a routinized pragmatic path, or whether it is part of the conventional meaning. Also Bybee et al. (1994) do not attempt to answer the question of how frequent cases where a certain inference is appropriate must be in order to analyze the meaning resulting from the inference as part of the encoded meaning. Furthermore, different speakers within the same speech community may have conventionalized the novel sense of a given expression to varying extents (e.g. Falkum, 2015: 96). To use Falkum's (2015) example,

merely presents the proposition as hearsay, and whatever assumptions about the epistemic status of the proposition this may yield depends on the context (see Chapter 3, §3.4.2, and the proposed account of the semantics and pragmatics of different types of epistemic expressions in Chapter 8).

some speakers of English may have stored the metaphorical sense of *lion* in their mental lexicon and access the speaker’s intended concept through a process of disambiguation upon hearing *John is a lion*. Other speakers of the same speech community may have stored one sense with the form *lion* and therefore access the intended meaning of the same utterance through a process of conceptual broadening (Falkum, 2015: 96).²⁰⁵ The choice between a lexical entry for the form *lion* with one sense or more senses may therefore seem impossible given that the intention is to reflect what speakers of the given language know about the meaning and use of the linguistic form in question. One solution to this dilemma is to investigate several individuals’ idiolects and check how conventionalized the novel meaning is in the speech community, probably by means of psycholinguistic experiments. In the case of Uummarmiutun *řukřau* ‘should’, however, another solution is available, because *řukřau* behaves morphosyntactically as a root modal (see Chapter 5, §5.3.1.3). This suggests that *řukřau* is stored with a root sense only, whereas the evidential interpretations are results of pragmatic processes. If the evidential sense that some speakers associate with *řukřau* in certain contexts is conventionalized in the future, the split polysemy account will be ready to reflect this in a semantic proposal; *řukřau* would simply encode a cluster of senses, one with the root meaning and one with the evidential meaning.

6.5 Summary

In accordance with the argumentation in the present chapter, the template in Figure 6.2 is suitable for capturing modal meaning:

Figure 6.2: Template for modal meaning

D[characterization (+[attribution])] yield [degree of force] towards p

A semantic proposal for a modal expression needs to characterize the restrictions on the modal domain and specify the restriction on modal force. The template is based on Papafragou’s (2000)

²⁰⁵ Falkum (2015: 92) points out that pragmatic inference in this way “[...] serves an important function in compensating for such differences among members of a language community, enabling them to end up with the same lexical senses but in many cases via distinct routes.”

account of English modals, where a modal item restricts the modal relation and the modal domain, where the latter consists of propositions entertained in a certain way. As Papafragou (2000) notes, “[...] *individual modal expressions will come out as permitting different kinds of domains of propositions as restrictors*”. This makes the original template significantly more promising for cross-linguistic application than other modal semantic templates in the relevance-theoretic literature, which do not include options for precise reflection of restrictions on modal type.

Papafragou’s (2000) conception of the modal source as a domain of propositions facilitates an understanding of how the interpretation of a modal expression varies in different contexts. During the interpretation of an utterance with a modal expression, the hearer needs to recover assumptions pertaining to the propositions in the modal domain. The process is guided by lexical restrictions on the modal domain, available contextual assumptions and the principle of relevance. The propositions in the modal domain in a specific context may hence be narrowed down to a more specific sub-set of propositions within the limits of the lexical domain restriction, and thereby yield various context-specific interpretations. Because the modal domain contains propositions, contextually available assumptions about these propositions may affect the context-specific interpretation. Moreover, the hearer will access more or less detailed assumptions regarding the propositions in the modal domain depending on what is necessary for meeting the expectations of relevance. This explains why the interpretation of an utterance with a modal sometimes includes exact assumptions about the modal source, while it at other times merely includes the assumption that e.g. something factual generates the force. Papafragou (2000) thereby offers a framework which facilitates cognitively plausible accounts of how the interpretation of a modal varies in context, as well as a model that allows for lexical specification of domain restrictions in accordance with language specific facts. As demonstrated throughout the chapter, Papafragou’s (2000) model nevertheless needed a few adjustments in order to increase its applicability. The proposed adjustments concern 1) restrictions on modal force, 2) the option of reflecting restrictions on attribution, 3) how to capture non-overlapping modals and 4) the lexical structure of root-epistemic overlapping expressions.

Modal force

Some modals in the languages of the world, including Uummarmiutun *hungnaq* ‘probably’, display varying force. To extend the cross-linguistic applicability of Papafragou’s (2000) original modal semantic template such that it can also account for such modals, I have proposed in §6.4.2 that the modal relation is understood as degrees of force – following Boye (2005, 2012a) – rather than as Papafragou’s (2000) dichotomy division into compatibility and entailment. The options for specifying modal force in a semantic proposal are highlighted in the table below:

Table 6.4: Modal force restrictions

Full	Partial	Neutral
Full	Less than full	

(Adapted from Boye, 2012a)

Modals are those expressions that restrict force lexically to less than full or to a more specific version of less than full force, i.e. to neutral or partial force (see Chapter 3, §3.4.1). The force restriction on modals with varying force are easily reflected in a semantic proposal as ‘less than full force’. Moreover, the application of degrees of force in a semantic proposal avoids problems inherited from formal philosophical logic (see Chapter 3, §3.3).

Attribution

Building on Papafragou’s (2000) original proposal, I have suggested that the semantic proposal for a modal expression may include restrictions on attribution of the propositions in the domain (see §6.4.3.2). Uummarmiutun *huk* is restricted to subject-internal properties (see Chapter 5, §5.3.3) and some Persian modals appear to restrict the domain to propositions entertained as desirable *to somebody*, i.e. the speaker or the interlocutor. Papafragou (2000) does not include bouletic modals in her study, but she does describe the desirability domain as consisting of propositions handled as descriptions of states of affairs desirable from some or other’s point of view (2000: 42). Restrictions on speaker, interlocutor as well as subject-internality, can be reflected easily in a semantic proposal as restrictions on attribution and rendered as a domain restriction.

Non-overlapping modals

Some modals in the languages of the world – including Uummarmiutun modals – do not display root-epistemic overlap, and the semantic proposals for such modals hence need to specify this. I have argued in §6.4.3-4 that a restriction to either root or epistemic meaning is predictable from the domain restriction. This follows partly from Papafragou's (2000) own conflation of the factual domain with descriptive use (and root meaning) and the belief domain with metarepresentative use (and epistemic meaning). Contrary to Papafragou (2000), I have argued that *all* domains are inherently domains of either descriptively used propositions or propositions used as metarepresentations. This proposal could complicate the account of root-epistemic overlapping modals if we want to characterize their domain restriction: a lexical domain restriction is inherently connected to *either* descriptive *or* metarepresentative use, and therefore a given lexical domain restriction predicts that the meaning is *either* root *or* epistemic. However, given that root-epistemic overlapping modals are cases of split polysemy, the complication does not apply: one sense can restrict a domain of descriptively used propositions while the other sense can restrict a domain of metarepresentations.

Root-epistemic overlap

The chapter has discussed the representation of root-epistemic overlapping modals in the mental lexicon. Where Papafragou (2000) proposes unitary semantics for all four modals in the scope of her study, the present chapter has proposed in §6.4.4 that these expressions are better analyzed as cases of what I have called 'split polysemy'. Split polysemy means that the lexical entry contains more than one conceptual address. In the case of root-epistemic overlapping modals, the root sense is stored on one address whereas the epistemic sense is stored on another address within the lexical entry. The label *split* polysemy is appropriate because the senses are not accessed as ad hoc concepts but rather by means of homing in on one of the stored conceptual addresses within the lexical entry. Some root-epistemic overlapping modals conventionally restrict their root uses in ways that do not apply on their epistemic uses. A split polysemous semantic proposal allows us to accurately capture the given restrictions on the root sense without falsely predicting that they also apply on epistemic interpretations. This would not be possible on a monosemous semantics

proposal. The split polysemy proposal thus facilitates more accurate semantic proposals for root-epistemic overlapping modals.

Given the proposed revisions, Papafragou's (2000) framework is now ready to be applied in a semantic and pragmatic account of the Uummarmiutun modals in focus of the study. Uummarmiutun modals do not display lexical root-epistemic overlap, but the proposed revisions of Papafragou's (2000) framework have nevertheless paid attention to the fact that modals in other languages of the world do. It is therefore reasonable to expect that the model will allow for cross-linguistic comparison of the semantic and pragmatic properties of modals cross-linguistically as well as be applicable to Uummarmiutun in the future, if some of the modals lexically restricted to root meaning should conventionalize epistemic meanings.

Chapter 7:

The Semantics and Pragmatics of Uummarmiutun modals

7.1 Introduction

The present chapter applies the revised version of Papafragou's (2000) model developed throughout the previous chapter to provide an account of the semantics and pragmatics of the Uummarmiutun modal expressions *řukřau* 'should', *hungnaq* 'probably', *huk* 'inner force' and *lla* 'can' analyzed in Chapter 5, §5.3. The sections §7.2-§7.5 each consist of a semantic proposal for the given expression along with an account of how the semantics together with pragmatic principles predict the various interpretations attested in the data set. §7.6 sums up the chapter.

7.2 řukřau

The analyses of the data on *řukřau* 'should' performed in Chapter 5, §5.3.1, show that *řukřau* is restricted to partial social force ('deontic necessity'). Utterances with *řukřau* are explained as expressions of commands and descriptions of plans, that is, *řukřau* makes a reference to a social force towards the actualization of the event represented by the proposition in its scope. Utterances with *řukřau* are not appropriate for expressing neutral force, and they are not appropriate for expressing that the proposition is related to desires or to a physical set of circumstances as the source of the force. Based on the collected data, the following semantics is proposed for *řukřau*:

(7.1) *řukřau* : D-normative yield **partial force** towards p

The semantic proposal states that a set of propositions – i.e. the propositions in the modal domain D – which are entertained as norms produce partial force towards the proposition p in the scope of *ɦukɦau*. Note that, as argued in Chapter 6, §6.4.3-4, a restriction to the normative domain inherently predicts that the expression is restricted to root modal meaning. This is so because the normative domain is a domain of propositions entertained as descriptions of norms from which it follows that p is entertained as a description of a state of affairs. Because the propositions related by the root modal are representations of descriptions of states of affairs, a root modal expresses a force relation between states of affairs where one affects the *actualizational* potential of the other. States of affairs can only affect the actualization of other states of affairs – not their verification – and hence a modal which relates descriptively used propositions expresses a root force. Epistemic modal meanings, on the other hand, involve metarepresentations, which are propositions representing beliefs or thoughts about something in the world rather than first-order descriptions of something in the world such as norms. An epistemic modal therefore expresses a force relation between thoughts where one affects the verificational (not the actualizational) potential of the other. If the meaning encoded by *ɦukɦau* had also covered epistemic modal meaning, like e.g. English *should* does, this would be reflected as a split polysemous entry, where one sense restricts the normative domain and the other sense restricts the domain of beliefs about expectations (see Chapter 6, §6.4.4.3 for details).

As it turned out from the data set, some but not all consultants accepted epistemic – more specifically hearsay evidential – interpretations of utterances with *ɦukɦau*, e.g. as in (7.2):

(7.2) Partially repeated from (5.80)

J: You, you’re seeing the .. somebody you heard the news and .. that gonna rain. But, you’re saying ..
 Hialuktukɦauɦuq because you heard this, the news.

Sentences under discussion:

Hila hialuktukɦauɦuq
 hila hialuk - ɦukɦau - tuq
 weather rain - *ɦukɦau* - IND.3.SG
 ‘It’s gonna rain (so I heard).’

However, another consultant associates the words *Hialuktuk̂faûfuq* ‘it rain- *̂fuk̂fau*’ with a root modal interpretation, which does not make sense given the weather denoting verb stem, rather than an evidential interpretation as we saw in (7.2) above.

(7.3) = (5.82)

The interviewer asked the consultant to make a sentence with *Hialuktuk̂faûfuq* ‘it rain-*̂fuk̂fau*:

N: I can’t. I can’t uhm .. I can’t let the weather rain myself. Havairaktuk̂f.. it’s not like ‘You going to work’. ‘You have to go to work!’ ‘Una havayaktuk̂faûfuq!’ I can’t say I have to let it rain.

S: I see.

N: I can’t say to the rain, honestly this rain has to rain because I said so. I can’t. I’m not the boss of the hahah!

Sentence under discussion:

(Una) hialuktuk̂faûfuq		
un	- na	hialuk - ̂fuk̂fau - tuq
DEM.EXT.VIS - PRON.DEM.SG.ABS		rain - ̂fuk̂fau - IND.3.SG

*‘It is supposed to rain’

Furthermore, the morphosyntactic evidence showed that in combination with other postbases, *̂fuk̂fau* patterns as a root modal. That is, consultants would reject sentences where *̂fuk̂fau* occurs in the slot for epistemic expressions, rather than assign an interpretation where *̂fuk̂fau* contributes with epistemic meaning. The morphosyntactic evidence thus indicates that epistemic – including evidential²⁰⁶ – interpretations are not part of the meaning encoded by *̂fuk̂fau*. Nevertheless, the occasional association of utterances with *̂fuk̂fau* with hearsay evidential meaning (see (7.2)) needs to be accounted for.

First of all, it is interesting to note that it is not uncommon cross-linguistically to find that expressions of partial force from a normative domain may also be used to yield hearsay evidential interpretations. Danish *skulle* (Boye, 2012a) and German *sollen* (Öhlschläger, 1989), for instance, are cases in point and for these expressions both meanings are so conventionalized that they are appropriately analyzed as part of their encoded meaning. Within the proposed model, the root interpretations of German *sollen* correspond to a partial force towards actualization coming from a set of propositions entertained as norms. On epistemic interpretations of utterances with *sollen*, the

²⁰⁶ Recall from Chapter 3 that evidential meaning as well as epistemic modal meaning as both subtypes of ‘epistemic meaning’ (see also Boye, 2012a).

proposition in the scope represents a claim belonging to a third party (Öhlschläger, 1989: 233-234; Palmer, 2001: 42; Eide, 2005: 32). An utterance of the sentence in (7.4), for instance, does not convey that the speaker thinks that the subject referent must be extremely rich, but rather that somebody else claims that the subject referent is extremely rich. That is, the belief is attributed to somebody other than the speaker:

- (7.4) Er soll steinreich sein.
 er soll stein - reich sein
 3.SG.MASC.NOM it.is claimed stone - rich be
 ‘He is said to be extremely rich.’ (Hammer in Palmer, 2001: 9)²⁰⁷
 ‘He is supposed to be filthy rich (so I’ve heard).’ (Eide, 2005: 32)

On epistemic uses, *sollen* is described as neutral in terms of ‘speaker attitude’ (Öhlschläger, 1989), and thereby encodes a notion of epistemic justification rather than epistemic force. This observation indicates an easily accessible conceptual link between a normative modal domain and hearsay evidential meaning. Both meanings involve external attribution, namely to social or moral circumstances in the case of social force, and to other individuals in the case of hearsay evidentiality. It is therefore reasonable to expect that this conceptual link is exploited when utterances with *řukřau* occasionally give rise to hearsay evidential interpretations.

Given that modal domains can be narrowed down in accordance with the principle of relevance to a more specific set of propositions than indicated by the encoded domain restriction (Papafragou, 2000), it is reasonable to expect that domains can also be broadened in accordance with the principle of relevance (see Chapter 6, §6.2.3.2). This seems to be what happens, when *řukřau* according to some consultants (see (7.2)) can be used to communicate hearsay evidential meaning in an utterance of a sentence like *Hialuktukřauřuq* ‘it rain-*řukřau*’.

As the consultant who rejects *Hialuktukřauřuq* ‘it rain-*řukřau*’ notes (see (7.3)), you are not the boss of the weather and thereby cannot command it to rain. This encyclopaedic knowledge is what makes her reject the word all together; *řukřau* relates the proposition in its scope to a set of norms, and since the subject referent is the weather and hence immune to influence from norms, the sentence becomes odd according to her. An interpretation involving the assumption that norms affect the actualizational potential of ‘it rain’ does not yield positive cognitive effects, because it is

²⁰⁷ Segmentation and glossing is my own responsibility.

a false description of the world. Assuming that the speaker intends to convey such an assumption would require the far-fetched assumption that the speaker holds false beliefs of what the world is like, including e.g. that she thinks that people can control the weather. Such assumptions are not easily accessible and hence the normative interpretation of *Hialuktuk̂raûruq* ‘it rain- *ruk̂rau*’ is rejected. Nevertheless, other speakers may use *ruk̂rau* in contexts where they expect the hearer to broaden the domain of norms to include a larger set of externally attributed propositions such as attributed beliefs and arrive at a hearsay evidential interpretation (as in (7.2)). *Hialuktuk̂raûruq* ‘it rain- *ruk̂rau*’ is therefore either not intelligible, or it can be interpreted if the hearer assumes that the speaker aims at optimal relevance *and* the context includes assumptions facilitating the broadening process. This would, for instance, be the case if it is mutually manifest to the speaker and hearer that the hearer is wondering what the weather is going to be like later that day. If such contextual assumption is available, a speaker who utters *Hialuktuk̂raûruq* ‘it rain- *ruk̂rau*’ would justifiably be expected to intend to convey a belief about the weather. If the hearer broadens the encoded domain of norms to a broader set of externally attributed propositions which includes attributed beliefs, she can access an optimally relevant interpretation of *Hialuktuk̂raûruq* ‘it rain- *ruk̂rau*’, namely that ‘it rain’ is epistemically justified by beliefs attributed to an external source.

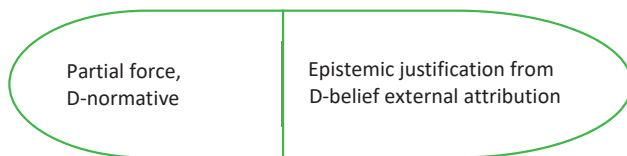
It may turn out in the future that the hearsay evidential meaning of *ruk̂rau* becomes so conventionalized that it is appropriately analyzed as part of the encoded meaning together with partial force from a normative domain. As outlined in Chapter 6, §6.4.4.2-3, this would happen if the hearsay evidential interpretation of utterances with *ruk̂rau* is warranted so many times in order to meet expectations of relevance that the pragmatic inferential routine employed for deriving the hearsay evidential interpretation becomes routinized and later acquires its own conceptual address in the representation of *ruk̂rau* in the mental lexicon. If Uummarmiutun undergoes this linguistic change in the future, the semantic proposal in (7.1) where only the root meaning is conventionalized will obviously not apply to *ruk̂rau* anymore.²⁰⁸ It appears that *ruk̂rau* may be on its way to conventionalizing the evidential meaning given the observation of the cross-linguistic tendency of root modals to acquire epistemic meanings (Bybee et al. 1994) plus data like (7.2).

²⁰⁸ Similarly, a root only semantics was suitable for English *may* in older versions of the language, while it is too restrictive to present day English *may*, which conventionally encodes epistemic as well as root meaning (see Bybee et al. 1994).

How can the proposed framework account for *řukřau* after the hypothesized semantic change has taken place? Like the evidential uses of German *sollen*, which do not restrict force, the evidential interpretations occasionally warranted for utterances with *řukřau* appear to be evidential only. That is, there is no apparent notion of a certain modal force in the evidential interpretation offered for *Hialuktukřauřuq* ‘it rain- *řukřau*’.²⁰⁹ On the root interpretations of *řukřau*, on the other hand, the force is clearly restricted to partial force. Therefore; if the evidential sense of *řukřau* is conventionalized in the future and becomes part of the code along with the root modal sense, the unitary semantic proposal in (7.1) above – i.e. an entry with one sense – for *řukřau* would be ill-fitted. However, if we propose a split polysemy analysis (see Chapter 6, §6.4.4.3), we can easily form a semantic proposal which predicts that the partial force restriction applies to the root meaning only and not to the evidential meaning. Each sense has its own conceptual address within the lexical entry:

(7.5)

*The lexical address of řukřau if the evidential sense becomes conventionalized.*²¹⁰



The root sense – which corresponds to the semantic proposal in (7.1) – includes a restriction on partial force, whereas the hearsay evidential sense does not restrict force. The evidential sense rather encodes a relation of epistemic justification between a domain of propositions entertained as externally attributed beliefs on the one hand, and the belief represented by the proposition in the scope of *řukřau* on the other.²¹¹ The prediction is that during the interpretation of an utterance with *řukřau*, the hearer accesses the whole cluster of meanings stored under the lexical address and homes in on the sense which is in accordance with the principle of relevance.

²⁰⁹ The speaker merely indicates that the proposition is hearsay without indicating how certain or uncertain she is about its epistemic status. See full discussion of datum (7.2=5.80) in Chapter 5, §5.3.1.3.

²¹⁰ Within the proposed framework, this is how present day German *sollen* would be analyzed.

²¹¹ See Chapter 3, §3.4.2, on the relation between epistemic modality and evidentiality, and Chapter 8 for a sketch on how the proposed framework handles evidentiality.

The framework proposed in the present thesis thereby offers the tools needed to account for the semantics and pragmatics of *řukřau* even if *řukřau* undergoes semantic change and conventionalizes evidential meaning. Nevertheless, in present day Uummarmiutun, the semantic proposal in (7.1) applies to *řukřau*, because a) not all speakers find that evidential interpretations are available for utterances with *řukřau*, and b) *řukřau* patterns morphosyntactically like a root modal postbase.

7.3 *hungnaq*

The data analyses in Chapter 5, §5.3.2, show that *hungnaq* ‘probably’ is restricted to epistemic modal meaning, and may be used to express neutral epistemic force as well as partial epistemic force. *Hungnaq* is not appropriate for expressing full epistemic force, and does not encode restrictions on evidentiality. That is, *hungnaq* is sensitive to degree of certainty only, and not to the properties of the evidence the speaker has for her degree of certainty. The following semantic proposal captures these properties of *hungnaq*:

(7.6) *hungnaq* : D-beliefs yield **less than full force** towards p

The semantic proposal states that *hungnaq* encodes a restriction on the modal domain to propositions entertained as beliefs. The restriction on the domain of beliefs inherently predicts that *hungnaq* is restricted to epistemic meaning, because beliefs are metarepresentations. This means that propositions entertained as beliefs are not entertained as first order descriptions of states of affairs. Rather, they are mental objects, i.e. they are entertained as objects of knowledge rather than as descriptions of states of affairs (see Chapter 6, §6.3.3; Papafragou, 2000). A force produced by objects of knowledge can only affect the verification of the proposition in the modal scope, not its actualization. In an interpretation of an utterance with an epistemic modal, the propositions related by the epistemic modal – i.e. the propositions in the modal domain and the proposition p in the modal scope – are representations of beliefs and the modal expresses a force relation between these beliefs where one affects the verificational – not the actualizational – status of the other. If *hungnaq* had encoded restrictions on evidentiality, this would have been reflected as restrictions on the

domain, such that it would consist of beliefs constituting evidence e.g. from a specific source (see Chapter 8 on how the proposed model captures evidential meaning).

The force restriction to ‘less than full force’ predicts that *hungnaq* is not used to express full certainty that the proposition is true. That is, the set of beliefs in the modal domain is not sufficient to push the proposition all the way to verification, and thereby the meaning contributed by *hungnaq* falls within the definition of modal meaning as unrealized force-dynamic potential (see Chapter 3, §3.4.1; Boye, 2005). The beliefs constituting the modal domain are beliefs held as true by the speaker. That is, in (7.7) for instance, the speaker believes that the subject referent likes Aklavik, and this belief he takes to yield less than full force towards the verification of the proposition ‘she will not move’:

(7.7) = (5.95)

J: Aklavik nakuarigaa [..]Nakuugigaa. Nuunniangit**chungnaqtuq**.

Sentences under discussion:

Aklavik nakuugigaa. Nuunniangit**chungnaqtuq**

Aklavik naku - u - gi - gaa

Aklavik goodness - be - feel.towards - IND.3.SG.SUBJ.3.SG.OBJ

‘She likes Aklavik.’

nuut - niaq - nngit - hungnaq - tuq

move - FUT - NEG - *hungnaq* - IND.3.SG

‘Maybe she will stay.’

Lit.: Maybe she will not move.

The restriction on less than full force predicts that *hungnaq* is suitable for expressing neutral epistemic force e.g. as in (7.7) above, as well as partial epistemic force, e.g. as in (7.8) below (see Chapter 5, §5.3.2.2, for details):

(7.8) = (5.101)

L: He must have reached. Nobody called us or nobody radioed us, Tikit**chungnaqtuq**, ‘He must have got there’. Otherwise we would have heard other – you know – other uhh .. something different.

Sentence under discussion:

Ii, tikit**chungnaqtuq**

ii tikit - hungnaq - tuq

yes arrive - *hungnaq* - 3.SG.IND

‘He must have reached.’

The semantic proposal in (7.6) correctly predicts that *hungnaq* may be used to express any degree of force except for full force. When *hungnaq* is used in an utterance, the denoted concept ‘less than full force’ may be narrowed down to a more specific concept of neutral or partial force in accordance with the principle of relevance. In (7.8), for instance, the contextual availability of the assumption that nobody has called us may be entertained as a belief that yields partial force towards the verification of the belief that the subject referent has reached the location in question, and hence the encoded less than full force is narrowed down to a notion of partial force. The semantic proposal also predicts that *hungnaq* may contribute with the more vague concept of ‘less than full force’ in contexts where this is sufficient to arrive at an optimally relevant interpretation of the given utterance. That *hungnaq* can be used to express a vague concept of ‘less than full force’ is indicated by data like (7.9), where the consultant associates the sentence with *hungnaq* with paraphrases including different degrees of epistemic force:

(7.9) = (5.103)

The interviewer has asked the consultant about the meaning of *Hialugungnaqtuq* ‘it is raining-*hungnaq*:

L: ‘It must be raining’. If you’re not too certain, you say *Hialugungnaqtuq*. ‘It might be raining’. It’s not definitely .. not like *Hialuktuq*. *Hialugungnaqtuq* means ‘It must be raining’. ‘It could be raining’ or ‘It might be raining’.

Sentences under discussion:

Hialugungnaqtuq	Hialuktuq
hialuk - <i>hungnaq</i> - tuq	hiluk - tuq
rain - <i>hungnaq</i> - IND.3.SG	rain - IND.3.SG
‘It must/might/could be raining.’	‘It is raining.’

Many Indo-European modals in the languages of Europe discriminate lexically between neutral and partial force (e.g. van der Auwera and Ammann, 2013). The hypothesis that *hungnaq* – or a similar expression in another language – is sometimes used to express the broader notion of less than full force should nevertheless come as no surprise, provided that it is sometimes not important to express exactly *how* uncertain we are of something, but merely that we are not one hundred percent certain. To verify the restriction on less than full force in the semantics proposed for *hungnaq* above, future research may seek to further confirm that *hungnaq* can be used to contribute with a concept of less than full force without requiring a process of narrowing down to neutral or partial force. A reason to revise the semantics proposed in (7.6) would be if future

research shows that *hungnaq* is systematically narrowed down to *either* neutral force *or* partial force when utterances with *hungnaq* are interpreted. In that case, this regularity should be reflected in the lexical representation of *hungnaq*. The split polysemy account, which is primarily proposed for capturing regularities pertaining to the senses stored with root-epistemic overlapping expressions, could then turn out to be applicable to *hungnaq*. *Hungnaq* would then be a case of split polysemy, where two senses are stored along with the form *hungnaq*, namely ‘D-beliefs yield *neutral* force towards p’ and ‘D-beliefs yield *partial* force towards p’. The two senses are appropriately analyzed as part of the same entry as a cluster of meanings, and their split structure predicts that the hearer in the process of interpreting *hungnaq* accesses the whole cluster of meanings and homes in on the sense in the cluster satisfying her expectations of optimal relevance.

In order to verify the restriction on less than full force and favour the semantics proposed in (7.6) above over a split polysemy entry, more cases need to be observed where *hungnaq* is associated with less than full force rather than a narrower concept of neutral or partial force. Nevertheless, until there is reason to believe that speakers of Uummarmiutun processing sentences with *hungnaq* always home in on one of the force senses lexicalized in European languages, i.e. until future research shows that *hungnaq* may *not* be used to express the concept of less than full force, I conclude that the lexical item *hungnaq* stores one sense, which includes a restriction on less than full force which may be narrowed down in accordance with the principle of relevance.

7.4 huk

As shown in Chapter 5, §5.3.3, *huk* ‘inner force’ may be used to express partial volitional force from a source which is the subject referent’s desires. This was predicted by the Uummarmiutun dictionary entry (Lowe, 1984: 104), where the meaning of *huk* is described as ‘to want to’.

(7.10) = (5.119)

Peter pulariaruktuq
 P. pulaaq - iaq - huk - tuq
 [NAME] visit - go.and - *huk* - IND.3.SG
 Peter wants to come visit.

The meaning expressed by *huk* in cases like (7.10) could be reflected as a restriction on the modal domain in terms of desirability. Such restriction on desirability is however too restrictive in that it turned out that *huk* – like similar postbases in other Inuktut dialects (Johns, 1999) – can take inanimate subjects. In those cases, the proposition in the scope of *huk* is hardly related to a domain of propositions entertained as the subject referent’s desires. Nevertheless, when *huk* occurs with an inanimate subject, the interpretation is such that the modal force originates from properties of the subject referent, e.g. as in (7.11):

(7.11) = (5.131)

L elaborates on the sentence *Havik naviguktuq* ‘the knife break-*huk*’:

L: [...] maybe it’s not a good knife. Maybe it’s a poor.. old knife or, just not made for that kind of whatever we’re doing. Maybe we’re cutting quaq.²¹² And then Afauna havik naviguktuq, Gee this knife keeps wanting to break while I’m doing it, this cutting.

Sentences under discussion:

Afauna havik naviguktuq
 EXCL havik navik - huk - tuq
 oh.no knife break - *huk* - IND.3.SG
 ‘Gee, this knife keeps wanting to break.’

It thus turns out that *huk* not only takes propositions entertained as desires in its modal domain. Rather, the domain restriction encoded by *huk* appears to be broader, such that it restricts the propositions to be descriptions of properties internal to the subject referent. The semantics of *huk* can hence be captured by the proposal in (7.12):

(7.12) *huk*: D-descriptions-subj.-internal yield **partial force** towards p

The semantic proposal states that *huk* encodes a restriction on attribution to the subject referent. Moreover, it states that *huk* restricts the modal domain to propositions entertained as descriptions. That is, *huk* restricts the modal domain to propositions entertained as descriptions of properties internal to the subject referent. In other words; the proposition in the scope of *huk* is a description of a state of affairs whose actualizational potential is related to internal properties of

²¹² Frozen meat or fish.

the subject referent. The restriction on attribution to the subject referent alone would not be sufficient to predict the meaning and use of *huk*: if the restriction on the propositions in the modal domain of *huk* to *descriptions* is omitted, the semantic proposal would falsely predict that *huk* is also appropriate for epistemic – more specifically evidential – interpretations similar to those conveyable by German *wollen* ‘want, hearsay’, where the proposition is presented as epistemically justified by beliefs attributed to the subject referent.²¹³ On such interpretations, the modal domain consists of propositions used as metarepresentations rather than descriptions. *Huk* restricts the propositions in the domain to subject-internal location, but since these propositions can only be descriptions and not metarepresentations, they can only be descriptions of the subject’s properties – not representations of the subject referent’s beliefs – and evidential interpretations are thereby unavailable. The restriction on the modal domain to descriptions of subject-internal properties rules out normative interpretations of *huk*. This is so, because norms are appropriately conceived of as something ‘external’, even in cases where the norms may be viewed as self-imposed. Therefore, the restriction on subject-internal attribution of the descriptions in the modal domain blocks interpretations where these are descriptions of norms, as these would be inherently external to the subject referent.

The restriction on the modal domain to propositions describing subject-internal circumstances predicts that volitional interpretations of utterances with *huk* are available when the subject referent is human (e.g. as in (7.10) above). On those interpretations, the modal domain is narrowed down from the domain of internal properties of the subject referent to a more specific set of subject-internal properties, namely the subject referent’s psychological or emotional properties. Together with contextual assumptions and the principle of relevance, the meaning of the verb stem arguably plays a role in guiding the process of narrowing down the modal domain. The scenario, in relation to which the sentence in (7.10) was given, is as follows: the husband has suggested to his wife that they go fishing. The wife’s brother Peter has said to her that he is going to visit, and the wife utters *Peter pulaariaruktuq* ‘he come and visit-*huk*’ to her husband.²¹⁴ Given the semantics proposed in (7.12), *huk* relates ‘Peter visit’ to a set of propositions describing properties of Peter. These properties can be physical properties of Peter or emotional properties. Assuming that the husband aims at an optimally relevant interpretation of his wife’s utterance, he will look for an

²¹³ See examples from Öhlschläger (1989) and Eide (2005) in §5.3.3.2.

²¹⁴ See datum (5.119) in Chapter 5 for details.

interpretation which is likely to be a true description of the world which has something to do with his suggestion to go fishing.²¹⁵ The assumption that Peter's internal physical properties produce a force towards the actualization of 'Peter visit' as well as the assumption that Peter's desires produce the force could both constitute a reason for the husband and wife to not go fishing. In that sense, they could both yield cognitive effects. However, the assumption that it is Peter's internal physical properties that produce the force is less likely to be compatible with a true description of the world and hence less likely to yield positive cognitive effects: internal physical properties are generally not what drive people towards visiting their sister. An interpretation based on the assumption that the modal domain contains propositions describing Peter's physical state would require more cognitive effort – e.g. accessing assumptions that visits are motivated by physical needs²¹⁶ – in return for an interpretation which is less likely to be a true description of the world. An interpretation where the proposition in the scope of *huk* is related to Peter's desires, on the other hand, is a) more likely to be true, and b) compatible with easily available contextual assumptions e.g. that people generally enjoy visiting each other. An interpretation of the sentence in (7.10) where the modal domain is narrowed down to descriptions of Peter's emotional or psychological state – i.e. his desires – thereby requires little cognitive effort and it yields positive cognitive effects in that it is likely to be a true description of the world in addition to being relevant to the suggestion of going fishing. A speaker who utters (7.10) can therefore expect the hearer to access the interpretation where it is the subject referent's desires which affect the actualization of 'he visit', as this interpretation yields more positive cognitive effects than an interpretation which requires far-fetched assumptions about other properties of the subject referent that produce partial force towards 'he visit'.

In other contexts, an optimally relevant interpretation of an utterance with *huk* requires the hearer to narrow down the modal domain to a set of propositions describing the physical properties

²¹⁵ False assumptions are not worth having (Sperber and Wilson, 2004: 251), and hence a hearer who expects the utterance to be worth the processing effort will look for an interpretation which is likely to be a true description of the world, other things being equal.

²¹⁶ Internal physical properties could obviously make it *possible* for the subject referent to visit. Say, for instance, that he was sick, but now he is not sick anymore, and thereby his physical properties make a visit possible. Note, however, that this scenario would involve a neutral force – not a partial force as the one encoded by *huk*. An interpretation of *Pulaariaruktuq* 'he come and visit-*huk*' without assumptions about desirability would therefore be one where the subject referent's physical properties urge him to visit, which is at best odd. If something other than desires yield partial force towards the actualization of a visit, it is generally something external such as norms, which is not compatible with the semantic restriction on *huk* to subject-*internal* properties.

of the subject referent. As we saw in Chapter 5, *Tagiuqturuktunga* ‘I (experience) sneeze-*huk*’ was offered as a vehicle for conveying ‘I have to sneeze’ (see datum (5.136)). A speaker who utters *Tagiuqturuktunga* ‘I (experience) sneeze-*huk*’ can expect the hearer to access the encyclopaedic knowledge that sneezing is a bodily function and thereby arrive at an interpretation where the subject referent’s physical properties yield partial force towards the actualization. As we saw in Chapter 5, the word *Tagiuqturuktunga* ‘I (experience) sneeze-*huk*’ can also be used to yield a desirability interpretation, in that a consultant translated *Tagiuqturuktunga* into ‘I wanna sneeze’ as well as ‘I’m going to sneeze’. The desirability interpretation would arguably result from accessing contextual assumptions about the pleasure of sneezing, e.g. when one’s nose is tickling.

It is moreover plausible that in some contexts, narrowing down the modal domain to either physical properties or desires may not be necessary for an optimally relevant interpretation of an utterance with *huk*. That is, deriving the interpretation from *Tagiuqturuktunga* ‘I (experience) sneeze-*huk*’ that the speaker is in a state which yields partial force towards her sneezing may yield sufficient positive cognitive effects to satisfy the expectations of relevance, and further processing leading to the assumption that this is due to her desires or her physical state may not always be worth the cognitive effort.

Upon the interpretation of *Pulaariaruktug* ‘he visit-*huk*’ on the other hand, an optimally relevant interpretation is one where the modal domain is narrowed down to propositions describing the subject referent’s desires. The process of narrowing down the domain in this case costs little cognitive effort because the assumption that people like to visit each other is made easily available based on the meaning of the verb stem and the subject referent being human. The desirability interpretation thereby yields positive cognitive effects in return for little cognitive effort. Likewise, narrowing down the modal domain of *huk* to physical properties upon the interpretation of *Havik naviguktug* ‘the knife break-*huk*’, where the subject referent is inanimate, yields positive cognitive effects, because a desirability interpretation is hardly a true description of the world – unless, of course, assumptions about knives having agency are available in the context, or the utterance is intended to be a humorous description of an uncontrollable knife with a cruel plan to annoy humans. In the absence of the availability of such assumptions in the context, a speaker who utters *Havik naviguktug* ‘the knife break-*huk*’ would hardly expect the hearer to arrive at a desirability interpretation, as this would require her to entertain beliefs about the world which are unlikely to be true.

The semantic proposal for *huk* in (7.12) is monosemous, and the various context-specific interpretations are accounted for as results of pragmatic narrowing of the modal domain. An alternative option is to propose a split polysemy semantics for *huk*, where one sense in the cluster is restricted to D-desires, and the other sense is restricted to D-subject-internal properties, or perhaps even D-physical properties of the subject. However, it seems unnecessary to store two separate senses in a lexical address, when various context-specific interpretations of *huk* can be easily accessed through the pragmatic process of narrowing down a domain restricted to descriptions of subject-internal properties when this is necessary for an optimally relevant interpretation.

7.5 *lla*

The analyses of the data collected on *lla* ‘can’ show that this postbase can be used to express neutral physical force and intellectual force. The source may be located internal to the subject referent, e.g. as in (7.13), or external to the subject referent e.g. as in (7.14):

(7.13) = (5.149)

S: Let’s imagine that I have a little daughter, and I’m very proud of her because she can drumdance. And I’m very proud, and then I tell a friend: My daughter can drumdance. How would I tell her in Uummarmiutun?

J: Arillařuq paniga

Sentence under discussion:

Arillařuq		paniga	
ari	- lla - řuq	panik	- ga
drum.dance - <i>lla</i> - IND.3.SG		daughter - POS.1.SG	
‘My daughter can drumdance.’			

(7.14) = (5.150)

Qannikpan uniarallařutin			
qannik - pan	uniaraq	- lla - řutin	
snow - COND.3.SG	travel.by.dogteam	- <i>lla</i> - IND.2.SG	
‘If there is snow, you can go dogsledding.’			

The data also showed that *lla* is not appropriate for expressing partial force. There are some indications in the data set that *lla* can be used to express epistemic meaning, however only on the level of implicatures, and epistemic meaning is hence not part of the meaning encoded by *lla*. Based on the collected data, I propose the following semantics for *lla*:

(7.15) *lla* : D-factual yield **neutral force** towards p

This semantics proposed for *lla* in (7.15) is similar to the semantics Papafragou (2000) proposes for English *can*. The only difference is that Papafragou (ibid.) reflects the modal relation of *can* as ‘compatibility’, whereas the semantics proposed for *lla* in (7.15) reflects the modal relation as neutral force. The semantic proposal states that *lla* encodes a restriction on the modal domain to propositions entertained as facts. In the absence of restrictions on attribution, (7.15) correctly predicts that *lla* can relate the proposition in its scope to facts about the subject referent – be they intellectual or physical – as well as facts about the physical circumstances external to the subject referent. As the factual domain is inherently a domain of descriptively used propositions (see Chapter 6, §6.4.3 and §6.4.4; Papafragou, 2000), the restriction to the factual domain inherently predicts that *lla* is lexically restricted to root modal meaning.

We saw in Chapter 5 that *lla* can be used to convey permission interpretations as well as physical force interpretations. One may hence object against the proposal in (7.15) and suggest that *lla* is better analyzed e.g. as a case of split polysemy, where one sense in the cluster is the semantics in (7.15) and the other sense in the cluster is neutral force from D-normative. However, this split polysemy proposal would fail to predict that *lla* is more closely associated with ability interpretations (recall §5.3.4.2). The semantics proposed in (7.15), on the other hand, offers this prediction. At the same time, it is compatible with the observation that *lla* – like English *can* – can be used to convey permission interpretations under certain contextual circumstances.

Permission interpretations of utterances with *lla* (and English *can*) are results of free pragmatic enrichment, more specifically pragmatic narrowing of the encoded factual domain (Papafragou, 2000: 50). Recall the explication of Papafragou’s (2000) account of English *can* and permission interpretations from Chapter 6. On the interpretation of *Of course you can - the law allows you to* (Papafragou, 2000: 50) for instance, the modal domain is narrowed down to a subset of factual propositions, which are descriptions of the law. This process of free pragmatic

enrichment is part of an optimally relevant interpretation of the utterance, because the modal source – i.e. the law – is verbally identified in the clause following the modal statement. The set of descriptions of the law is the context-specific set of propositions entertained as facts which could but do not prevent the actualization of ‘the hearer leave her husband penniless’ (see §6.3.3.3 for details). Let us work through datum (7.16) below, to see how free pragmatic enrichment – more specifically conceptual narrowing – is involved in the derivation of a permission interpretation of an utterance with *lla*:

(7.16) = (5.151)

Before the interview, J told S about his grandfather. When J was a kid, his grandfather would always tell him to get all the chores done first and then he could go and play.

S: So how would your grandfather say to you: you have to sew, no .. you have to saw first ? You, you have to, you gotta finish this work, and then you can go and play. How, how would he say that in Inupiatun?

J: uhhh .. hanaiqqaafutin. Hanaiqqaarutin piuraariallahifutin. It means, get ready first, get everything ready, and then you could go play.

Sentence under discussion:

Hanaiqqaafutin piufaariallahifutin

hanai - qqaa - futin piufaaq - iaq - lla - hi - futin
 get.ready - first - IND.2.SG play - go.and - lla - start.to - IND.2.SG
 ‘You get ready first, then you could go out and play.’

The semantic proposal for *lla* predicts that a domain of propositions entertained as descriptions of facts yields neutral force towards the actualization of ‘piufaariaq-hifutin’ (‘you go and play’) in (7.16). The utterance with *lla* is uttered by a grandfather to his grandchild, and prior to the segment with *lla*, he communicates ‘You get ready first’. In this context, easily available assumptions about the propositions constituting the modal domain are descriptions of the grandfather’s preferences. The grandfather has authority over his grandchild and more importantly he, as an Elder, knows how it is wise to prioritize activities and tasks, and this is mutually manifest to him and the grandchild.²¹⁷ The grandfather’s preferences and his knowledge about what is best practice are hence the context-specific set of facts which could but do not prevent the grandchild from actualizing ‘go and play’. Because these are assumptions about best practice *in the view of the*

²¹⁷ In Inuit culture, Elders are respected for their knowledge, and their wisdom is acknowledged.

grandfather who has authority over the grandchild *and* because the grandchild arguably wants to go and play, the utterance yields a permission interpretation. The propositions in the modal domain in (7.16) are hence descriptions of norms, which are entertained as factual circumstances which could but do not prevent the grandchild from going out and playing when he has done his chores.

The restriction on D-factual in the semantic proposal in (7.15) plus pragmatic principles therefore predict that *lla* can be used to convey permission interpretations: the modal domain of facts can be narrowed down in accordance with the principle of relevance to descriptions of any state of affairs, as long as they constitute factual circumstances which could but do not prevent the actualization of the predicational content. And the states of affairs described by these propositions arguably affect the interpretation. This account of the pragmatic processes involved in the interpretation of *lla* is possible due to Papafragou's (2000) notion of a modal domain as a set of propositions entertained in a certain way. It facilitates an account of how the context-specific interpretations of a modal may vary according to *what* the propositions in a domain describe, while the lexical specification of the modal domain restricts *how* these propositions are entertained. This has, in turn, allowed for a semantic proposal for *lla* which predicts that while *lla* can indeed be used to convey permission interpretations, *lla* is more closely associated with subject-internal and external ability interpretations, and hence the proposal that *lla* is lexically restricted to the factual domain while permission interpretations are accounted for as results of pragmatic inference rather than as being reflected directly in the semantic proposal.

As mentioned above, there are a couple of cases in the data set indicating that a sentence with *lla* may be associated with epistemic meaning. The use of *lla* to express epistemic meaning does however not seem to be conventionalized. When occurring together with *nngit* 'negation' in a verbal word, it turned out that *lla* has to precede *nngit*, while the opposite order – which is the permitted relational order of the epistemic modal *hungnaq* and *nngit* 'negation' – is ungrammatical (see datum (5.161)). If epistemic interpretations of *lla* had been part of the encoded meaning, it would have been reasonable to expect that *lla* would allow the relational order permitted for epistemic modal expressions. It therefore seems that when *lla* is used to convey epistemic meaning in present day Uummarmiutun, the epistemic meaning is conveyed as an implicature. If a set of factual states of affairs could but does not block the actualization of the event represented by the proposition, then it follows that the actualization of this event is possible. In other words, if there is nothing preventing the actualization of the state of affairs represented by the proposition in the

modal scope, then there is also nothing preventing the belief that the proposition in the modal scope represents a true description of the world. That is, the neutral actualizational force towards *p* is compatible with there being neutral verificational force towards *p*. It is therefore easy to derive epistemic implicatures on the basis of an utterance which presents the actualization of the event as possible, and hence it should come as no surprise that *lla* may be used to communicate epistemic meaning through implicatures. If it should turn out at a later state of Uummarmiutun that epistemic implicatures are warranted so many times for utterances with *lla* that epistemic meaning becomes part of the conventional meaning of *lla*, a split polysemy account may become appropriate. The lexical entry for *lla* would then contain a cluster of senses where one sense corresponds to the semantic proposal for present day *lla* in (7.15) above, and the other sense is neutral force from the domain of propositions entertained as beliefs. Such semantic change, i.e. where a form restricted to root modal meaning lexicalizes an epistemic modal or evidential sense, is cross-linguistically common (e.g. Bybee et al. 1994).

7.6 Conclusions

The semantics proposed for the Uummarmiutun expressions in focus of the study are as follows:

<i>řukřau</i> :	D-normative	yield	partial force	towards <i>p</i>
<i>hungnaq</i> :	D-beliefs	yield	less than full force	towards <i>p</i>
<i>huk</i> :	D-descriptions-subj.-internal	yield	partial force	towards <i>p</i>
<i>lla</i> :	D-factual	yield	neutral force	towards <i>p</i>

Together with pragmatic principles, the semantic proposals predict the meanings observed for these four modals in the data set.

The meaning of *řukřau* ‘should’ relates the proposition in its scope to a domain of propositions describing norms, and this predicts that *řukřau* is restricted from volition and other subject-internal sources. The use of utterances with *řukřau* to convey hearsay evidential interpretations can be accounted for by proposing that these interpretations occur as results of

broadening the normative domain such that it contains not only normative propositions – which are external by default – but a broader set of externally attributed propositions which also includes attributed beliefs. If hearsay evidentiality should become part of the conventional meaning of *řukřau* in the future, *řukřau* will be accounted for within the proposed model as a case of split polysemy (see Chapter 6, §6.4.4.3).

Hungnaq ‘probably’ is limited to epistemic modal meaning, and this is predicted by the restriction to the belief domain. *Hungnaq*’s domain is a domain of beliefs without further restrictions on these beliefs – e.g. source or access – and this reflects the finding that *hungnaq* is an epistemic modal without evidential restrictions. The force restriction of *hungnaq* is captured by the label less than full force (Boye, 2012a), which successfully predicts that *hungnaq* is a varying force modal. The force restriction also predicts that *hungnaq* can be narrowed down to a more specific force notion – neutral or partial force – if this is necessary for an optimally relevant interpretation of the utterance in the given context.

Huk ‘inner force’ can give rise to desirability interpretations as well as interpretations where physical properties of the subject referent are the source. This is predicted by the restriction on *huk* to subject-internal attribution of the descriptions in the domain. Depending on the available contextual assumptions about the subject referent and the predicational content, as well as expectations of relevance, the domain of subject-internal properties can be narrowed down to a more specific domain consisting of the subject referent’s desires or physical properties. Since the propositions in the domain of *huk* are restricted to descriptively used propositions, the semantic proposal successfully reflects that the meaning of *huk* does not cover subject-internal hearsay evidentiality.

Lla ‘can’ can be used to relate the predicational content to circumstances internal or external to the subject referent. This is reflected by the restriction to the domain of facts. *Lla* may also be used to express permissions, and this happens when the modal domain of propositions entertained as facts is narrowed down to a sub-set of facts which are descriptions of norms or preferences e.g. from a more knowledgeable person or another authority. The occasional association of utterances with *lla* with epistemic interpretations observed in the data set are not due to adjustment of the domain, but rather due to inferences leading to implicatures with epistemic meaning. If *lla* at a later point should conventionalize epistemic meaning, *lla* would be handled within the proposed model as a case of split polysemy.

The proposed revised version of Papafragou's (2000) model has proved capable of accounting for the semantics and pragmatics of the four Uummarmiutun modals in focus of the study. Awareness of pragmatic processes allows us to identify how the context-specific interpretations occur, and the relevance-theoretic distinction between semantics and pragmatics as code and inference allows us to determine which meaning properties are part of the code and which aspects of an interpretation are better accounted for as results of pragmatic inference. With the proposal put forward in Chapter 6 that all domains are inherently domains of descriptions or metarepresentations, we can easily reflect that a given modal is restricted to either root or epistemic meaning. This does not disturb the account of root-epistemic overlapping modals, however, since these, as argued in Chapter 6, are cases of split polysemy. The split polysemy proposal also ensures that the proposed framework is tailored to capture the present day root-only modals in Uummarmiutun in the future if they should conventionalize epistemic meaning. The inclusion of Boye's (2012a) division of forces offers a label which successfully captures varying force modals, and moreover ensures that modal force in general is reflected in accordance with the linguistic expression of modality. Last but not least, this way of specifying force in a semantic proposal explicitly reflects whether an expression is modal, because modal meaning is defined as unrealized force-dynamic potential, which means that a linguistic expression with a restriction on less than full force or a sub-type thereof is a modal.

Another benefit of the proposed revised model is that it can not only be used to capture the semantics and pragmatics of modal expressions, but also the semantic and pragmatic properties of non-modal epistemic expressions, including evidentials. The next chapter explores how this is done.

Chapter 8:

A sketch of the semantic and pragmatic properties of epistemic expressions in Uummarmiutun and beyond

8.1 Introduction

The previous chapter gave an account of the semantics and pragmatics of the four Uummarmiutun modals in focus of the present study. None of these expressions turned out to encode evidential properties. However, the relationship between evidentiality and epistemic modality is heavily debated in the linguistics literature (e.g. Matthewson et al. 2007; Kehayov, 2009; Matthewson, 2010; Fintel and Gillies, 2010; Boye, 2012a). All works acknowledge that the two types of meaning are related, while some even argue that they are conflated (see Chapter 3, §3.4.2, for details). Therefore, since I have now – based on Papafragou (2000) and Boye (2012a) – proposed a model for capturing modal meaning, it is appropriate to address whether and how it offers any insights or problems with respect to the similarities and differences between evidentiality and epistemic modality. In Chapter 3 it was argued, following Boye (2012a), that evidentiality and epistemic modality are subtypes of epistemic meaning, which means they are separate but related types of meaning. From this it follows that epistemic modals and evidentials are all epistemic expressions, and hence they may be used to convey assumptions about the epistemic status of the proposition

in their scope. But how exactly do epistemic expressions of various types affect the interpretation with respect to the epistemic status of the proposition?

Papafragou (2000) does not treat evidentiality in her monograph on modal meaning. Nevertheless, it is worth exploring how her idea of domains of propositions and restrictions on how they are entertained can be used to capture evidential meaning in addition to modal meaning.²¹⁸ In this chapter, I shall sketch how the proposed model intended to capture modal meaning can handle the semantics of expressions of evidential meaning and account for the pragmatic properties of different types of epistemic expressions. As we shall see, the model proposed in the present thesis is a coherent model for capturing not only the Uummarmiutun modals in focus of the study, but also two non-modal epistemic expressions, *niq* ‘apparently’ (analyzed in Chapter 5, §5.2.5) and *guuq* ‘hearsay’ (analyzed in Chapter 5, §5.2.3). The framework thereby facilitates an understanding of the similarities and differences among epistemic expressions.

The aspects of the framework introduced in the present chapter employ Boye’s (2012a) notional distinction between epistemic force and epistemic justification together with Papafragou’s (2000) idea of domains and how these are related to the proposition in the scope of the given expression. To account for the pragmatics of various types of epistemic expressions, the relevance-theoretic notion of ‘epistemic vigilance’ (Sperber et al. 2010) will be employed. This will provide a deeper cognitive understanding of the derivation of interpretations of epistemic expressions restricted to epistemic force on the one hand, and epistemic expressions with no encoded force restriction on the other. First, the distinction between epistemic justification and epistemic force and the role of these notions in semantic proposals are explicated in §8.2. Then §8.3 explains the notion of epistemic vigilance in communication in general and its role in the account of the pragmatics of epistemic expressions. §8.4 provides the sketch of how the semantics and pragmatics of various types of epistemic expressions can be handled within the proposed framework, and §8.5 sums up the chapter.

²¹⁸ See Berthelin (2017) for an initial attempt to extend Papafragou’s (2000) model to evidential expressions.

8.2 Epistemic force and epistemic justification

As shown in Chapter 5, §5.2.5, the postbase *niq* ‘apparently’ expresses full certainty that the proposition in its scope is true and evokes the idea that this certainty is based on a piece of evidence, i.e. ‘mediated evidentiality’ in the sense of Lazard (2001). This is illustrated in L’s elaboration in (8.1):

(8.1) = 5.35

L elaborates on the sentence *tiglingniraa* ‘he stole it-*niq*’:

L: And when you say *tiglikkaa* it’s like, he stole it. Just something was stolen. Like .. but *tiglingniraa*, almost like you have evidence for it, it’s more like real, the truth, really. No assumption.

Sentences under discussion:

<i>Tiglikkaa</i>	<i>Tiglingniraa</i>
<i>tiglik</i> - <i>kaa</i>	<i>tiglik</i> - <i>niq</i> - <i>raa</i>
steel - IND.3.SG.SUBJ.3.SG.OBJ	steel - <i>niq</i> - IND.3.SG.SUBJ.3.SG.OBJ
‘He stole it.’	‘He stole it.’ (I have evidence)

With an encoded restriction on full epistemic force, *niq* is not a modal, as the force-dynamic potential is realized; the piece of evidence has pushed the proposition all the way to verification. *Niq* is nevertheless an epistemic expression due to its evidential properties as well as the restriction on full epistemic force (see Chapter 3, §3.4; Boye, 2012a). Like *niq*, epistemic modals also encode a restriction on epistemic force. It may therefore be the case that the semantics of evidential epistemic expressions like *niq* can be phrased in a similar way as the semantics of epistemic modal expressions within the proposed revised version of Papafragou’s (2000) model.

As outlined in Chapter 6, §6.3.3, Papafragou (2000) conceives of epistemic modal meaning as a modal relation between propositions entertained as beliefs. It appears to me that this conception of epistemic modal meaning can be extended to epistemic meaning in general. Following Papafragou’s (2000) account of epistemic modal meaning as relations between propositions in the domain of beliefs, an epistemic expression can be defined as follows:

(8.2)

Definition of an epistemic expression:

An epistemic expression is a linguistic item which encodes a relation between the proposition in its scope and a domain of propositions entertained as epistemic objects, i.e. as representations of beliefs

or representations of evidence (which may be restricted further e.g. in terms of being acquired through a specific source or being accessible to a specific group of people).

Epistemic modals are those expressions which restrict the relation to a domain of epistemic objects to less than full force or a sub-type thereof, i.e. neutral or partial force. Non-modal epistemic expressions restrict the relation to full force or, as will be addressed in due course, to epistemic justification. Evidentials encode a restriction on a domain of propositions entertained as representations of pieces of evidence, which may be restricted to certain properties. Visual evidentials, for instance, encode a restriction on D-visual, and auditory evidentials restrict D-audio.

Recall the conception of evidentiality in Chapter 3 where evidential meanings represent different types of justification of a proposition (Boye, 2012a: 19). As argued in §3.4.2.1, it follows from this conception of evidentiality that the class of evidential expressions is not limited to expressions restricting specific types of information sources as in the traditional sense of evidentiality (see Aikhenvald, 2003, 2004). Rather, an evidential expression is understood in the present study as an expression that restricts any aspect of the evidence justifying the proposition, including e.g. who has access to the evidence or even just the existence of evidence as in the case of *niq*.

Niq does not specify the type of evidence in the sense of ‘information source’. However, *niq* makes a reference to the *existence* of a piece of evidence, i.e. mediated evidentiality (Lazard, 2001). It is therefore reasonable to reflect this restriction on evidence in the semantic proposal for *niq*. Whatever experience constituting the evidence for the proposition in the scope of *niq*, it is presented as yielding full epistemic force towards p. In cognitive terms, the speaker entertains representations of a piece of evidence which have an effect on an aspect of the proposition in the scope. This effect is arguably epistemic, since evidence *qua* evidence can hardly affect actualization, only verification (Boye, 2005). Also, the representation of the piece of evidence is entertained as a mental object, rather than a description of a state of affairs. In other words, we are dealing with a relation between metarepresentations and hence epistemic meaning (see Chapter 6, §6.3.3; Papafragou, 2000). This leads to the following semantic proposal for *niq*:

(8.3) *niq* : D-evidence yield **full force** towards p

The revised version of Papafragou's (2000) model together with Boye's (2012a) notion of full force thereby allows for the formation of a semantic proposal for the Uummarmiutun evidential *niq* which reflects its evidential restrictions as well as its force restrictions. Not all evidential expressions, however, encode a restriction on force (Boye, 2012a). The question is now whether semantic proposals for this type of evidential can be phrased within the proposed model.

The Uummarmiutun clitic *guuq* 'hearsay', for instance, is an evidential which does not encode a restriction on a specific degree of epistemic force, but merely indicates that the information represented by the proposition was reported to the speaker (recall Chapter 5, §5.2.3). Depending on the context, the use of *guuq* can be used to indicate that the proposition has a high epistemic status as in (8.4), or a low or even negative epistemic status as in (8.5):

(8.4) = (5.21)

Scenario: You want to cook for your colleague Peter, and you don't know him that well. And then you're wondering what you're gonna cook for him. And the one person says *Tuttu nakuarigaaruq* ('he likes caribou-*guuq*) and the other one says *Natchiq nakuarigaa* ('he likes seal'). Would you then choose to cook caribou or seal for him?

L: He said he likes caribou. You know – cause you got that -**gaaruq**, that Peter, that, that person told this person 'He likes that caribou'. But when you just say *Natchiq nakuarigaa*, it just.. he just said 'He likes the seal'. But when you say *nakuarigaaruq*, like it's another person [...] *Tuttu nakuarigaaruq*, -**gaaruq** means he knows, he was told, that that person ... [...] and then *Natchiq nakuarigaa*, it just says 'He likes seal'. You know – he never, nobody told him that. It's just 'He likes seal'. But when you say *Nakuarigaaruq* [...] Peter told this person. And this one, he didn't tell me he likes it, but I know he likes seal.

S: Yeah.. What would you make for him then?

L: I would make him this (points at the sentence *Tuttu nakuarigaaruq* in the interview guide), because he said he liked it.

Sentences under discussion:

Tuttu nakuarigaaruq
 tuttu nakuari - gaa - guuq
 caribou like - IND.3.SG.SUBJ.3.SG.OBJ - *guuq*
 'He said he likes caribou.'

Natchiq nakuarigaa
 natchiq nakuari - gaa
 seal like - IND.3.SG.SUBJ.3.SG.OBJ
 'He likes seal.'

(8.5) = (5.19)

L: Igluliuqtuguuq. That means ‘He says he’s building right now’. But it’s not happening.

Sentence under discussion:

Igluliuqtuguuq
 iglu - liuq - tuq - guuq
 house - build - IND.3.SG - *guuq*
 ‘He says he’s building a house.’ (But it’s not happening.)

Since the epistemic status of the proposition in the scope of *guuq* varies, the inclusion of a restriction on a certain degree of force would be inappropriate in a semantic proposal for *guuq*. However, *guuq* still seems to relate the epistemic properties of the proposition to a mental representation of a piece of evidence, i.e. the representation of reports. Given these observations, Boye’s (2012a) notion of epistemic justification seems to offer a way to specify the relation between the domain of reports and the proposition in the scope of *guuq*. Let us recap the distinction between epistemic force and epistemic justification (Boye, 2012a) and see how the latter notion applies to *guuq*.

Boye’s (2012a) notional category of epistemicity shown in Chapter 3 is repeated here:

Table 8.1 – Boye’s (2012a) notional category of Epistemicity

Epistemicity	
Justificatory support	
Epistemic modality • Epistemic support	Evidentiality • Epistemic justification

As shown in Table 8.1, Boye (2012a) defines epistemic modality as ‘epistemic support’ and evidentiality as ‘epistemic justification’. In the present thesis, the notion of epistemic support was extended to a general notion of ‘force’ in the previous chapters and applied in the semantic proposals for root modals as well as epistemic modals.²¹⁹ In accordance with Boye (2012a) himself, epistemic support is not limited to modality, as epistemic support can also be full. The same applies

²¹⁹ Epistemic force and epistemic support are basically the same, i.e. epistemic support and epistemic force both refer to the epistemic version of the more general notion of force which applies to root and epistemic meaning alike (see §3.3.4).

to epistemic force. The role of Table 8.1 in the present chapter is to point out that epistemic force and epistemic justification are both sub-types of epistemicity, and expressions restricted to epistemic force or epistemic justification thereby all contribute with epistemic meaning to the utterance interpretation. Expressions restricted to epistemic force and expressions restricted to epistemic justification however do so in different ways, as they are expressions of different epistemic notions. Presenting a proposition as epistemically justified by a given type of evidence is not the same as stating to what degree that type of evidence yields force towards the truth of the proposition. A restriction on epistemic justification thereby merely restricts the interpretation such that the epistemic properties are justified by the given evidence. In other words, the verification of *p* depends on the evidence, rather than being supported by it. A lexical restriction on epistemic justification does thereby not limit the interpretations to a specific degree of epistemic force, and hence it seems to be an appropriate label for the relation encoded by *guuq* between a domain of propositions entertained as reports and the proposition in the scope:

(8.6) *guuq* : D-report epistemically justifies *p*

The semantic proposal correctly predicts that the use of *guuq* is compatible with any interpretation regarding the epistemic status of the proposition. The use of *guuq* presents the proposition as justified by reports, and hence *guuq* indicates that the epistemic status of the proposition depends on the credibility of the reports.

The restriction on epistemic justification allows for the various context-specific epistemic statuses a proposition in the scope of *guuq* can have. But how do we predict the variation? It is interesting to note that the use of evidential expressions which do not lexically restrict a specific degree of epistemic force may indeed be used to yield various context-specific interpretations regarding the epistemic status of the proposition. The derivation of context-specific assumptions regarding the epistemic status of the proposition in the scope of such evidentials needs to be accounted for. *Guuq* can apparently be used in an utterance to communicate an interpretation where the proposition has a high epistemic status, while in other contexts *guuq* is used to indicate that the proposition has a lower epistemic status (see (8.4) and (8.5) above). This aspect of interpretations of utterances with *guuq* appears similar to interpretations of utterances with epistemic expressions restricted to force; a lexical restriction on partial force (e.g. as in English *must*) indicates a fairly

high epistemic status, whereas a restriction on neutral force (e.g. English *may*) indicates a lower epistemic status. Epistemic force expressions and epistemic justification expressions alike can thus affect the epistemic status of the proposition, but they seem to do so in slightly different ways. In the case of expressions like *guuq*, the aspects of the interpretation pertaining to epistemic status are a product of the code in combination with contextual assumptions about the reporter – and may hence vary according to the context – whereas in the case of epistemic force expressions the epistemic status is lexically restricted. The question is now what exactly epistemic force expressions and epistemic justification expressions have in common, and what exactly the difference is between the interpretation processes involved when it comes to accessing assumptions about the epistemic status of the proposition in their scope. In the next sub-section I shall propose that these similarities and differences can be accounted for if we employ the relevance-theoretic notion of ‘epistemic vigilance’ (Sperber, et al. 2010). But first, let us summarize the various types of epistemic expressions that can be identified through the notions employed in the present sub-section and see how their semantic proposals can be phrased within the model.

Using Papafragou’s (2000) idea of domains of propositions plus Boye’s (2012a) distinction between epistemic force and epistemic justification, we can form semantic proposals which clearly reflect whether an epistemic expression is evidential, modal or both. The templates in (8.7) below correspond to different types of epistemic expressions:

(8.7) Types of epistemic expressions

- (a) *Evidential without force restriction (non-modal)*

D-[evidence restriction] **epistemically justifies** p

- (b) *Evidential with non-modal force restriction*

D-[evidence restriction] **full force** towards p

- (c) *Evidential with modal force restriction*

D-[evidence restriction] **neutral/partial/less than full force** towards p

- (d) *Non-evidential modal*

D-belief **neutral/partial/less than full force** towards p

An expression which restricts the domain to mental representations of evidence is an evidential, and its semantic representation corresponds to one of the types in (8.7a-c). If the expression restricts the domain to mental representations of evidence without restricting degree of force (Type (a)), it is a non-modal evidential. An expression is also a non-modal evidential if it restricts the relation between a domain of mental representations of evidence and the proposition in its scope to full force (Type (b)). An epistemic expression which restricts the relation to less than full force or a sub-type thereof is modal, as in the types (8.7c-d). If the expression also restricts the domain to a set of mental representations of evidence, it is evidential as well as modal (Type (c)). The next section is concerned with disentangling the interpretation processes involved in epistemic expressions restricted to justification on the one hand, and epistemic expressions restricted to epistemic force on the other.

8.3 Epistemic vigilance

Sperber et al. (2010) propose that humans have a suite of cognitive mechanisms for epistemic vigilance, which is employed to ensure that we are not accidentally or intentionally misinformed by others when we engage in communication. Procedures for epistemic vigilance are divided into procedures for assessing the reliability of the source of communicated information and procedures for assessing the reliability of the content (Sperber et al. 2010; see also Wilson, 2011). The mechanism for epistemic vigilance is, Sperber et al. (ibid.) argue, indispensable for communication to remain advantageous. In other words, when we process an utterance, we arguably also make use of assumptions about the speaker's honesty and competence on the topic in order to determine whether we believe what she intends to communicate to us (see Sperber et al. 2010, for details). Epistemic vigilance is hence a general procedure that humans make use of when engaging in communication.

Wilson (2011, 2012, 2016) proposes that linguistic expressions of evidentiality and epistemic modality – as well as discourse connectives, e.g. *after all* and *so* – are linked to mechanisms for epistemic vigilance, as these groups of expressions are used to mark the utterance

content as part of an argument.²²⁰ Epistemic expressions are thereby classified as triggers of epistemic vigilance and hence as expressions activating the argumentation module of human cognition (Wilson, 2011, 2012, 2016). Wilson (2016) illustrates her point as follows:

Suppose, now, that I want you to believe some proposition, but I am not sure you will take my word for it in the absence of any information about the type of evidence I have available or my reliability on that topic. An obvious way to persuade you would be to display openly the type of evidence I have [...] (Wilson, 2016: 16).

What Wilson (*ibid.*) seems to suggest is that speakers can make use of linguistic expressions to affect the hearer's epistemic vigilance by referring to evidence as part of an argument.

Arguments affect whether we believe something or not, and when entertained – publicly or privately – they affect epistemic vigilance. The figures below are intended to illustrate Wilson's (2011, 2012, 2016) proposal that epistemic modals (Figure 8.1-8.2) and evidentials (Figure 8.3) are linked to epistemic vigilance in that their interpretation involve the representation of an argument.²²¹ In line with the outline of the difference between epistemic force and epistemic justification in §8.2 above, Boye's (2005, 2012a) notion of force is applied in the representation of the argument involved in the interpretation of modalized utterances, and Boye's (2012a) notion of justification is applied in the representation of the argument involved in the interpretation of the evidential example:

²²⁰ According to Wilson (2011, 2012), discourse connectives are linked to epistemic vigilance towards the content, whereas epistemic modals and evidentials are linked to epistemic vigilance towards the source. That epistemic expressions are linked to epistemic vigilance towards the *source* is intuitively clear. In the case of epistemic modals, the source would be the beliefs in the modal domain plus the person holding them (i.e. the speaker in most cases), and in the case of evidentials the source would be the evidence, including how it is obtained and who has access to it. I shall not go deeper into the target of epistemic vigilance triggered by discourse connectives here, but merely suggest that we may expect to find discourse connectives which trigger epistemic vigilance towards the source as well as the content, if the discourse connective in question has epistemic meaning.

²²¹ Epistemic modals and evidentials – at least the ones considered in the present study – mark the linguistic material in their scope as a representation of the conclusion of the argument. Discourse connectives, on the other hand, differ with respect to whether the linguistic material in their scope is marked as a representation of the premise or the conclusion of the argument.

Figure 8.1: Must

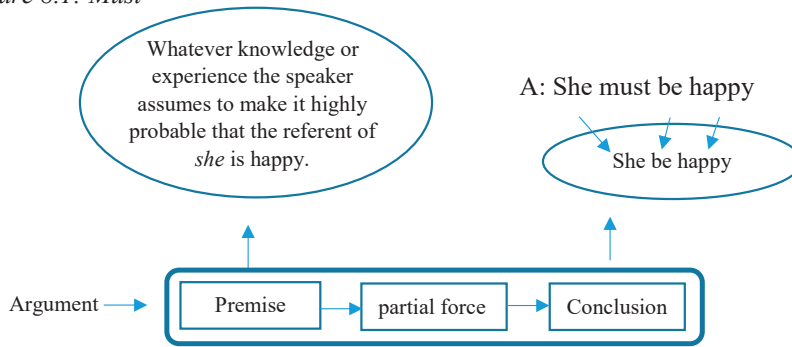


Figure 8.2: Might

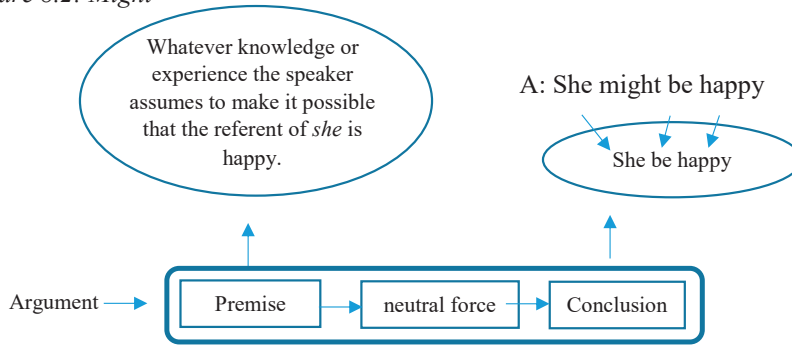
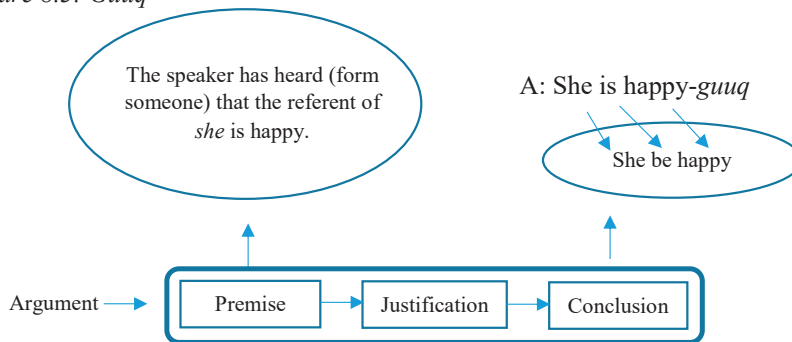


Figure 8.3: Guuq



So far, I follow Wilson (2011, 2012, 2016) in her proposal that epistemic expressions trigger mechanisms for epistemic vigilance. There is however a minor point where Wilson's (2016) proposal and the one developed here differ, namely with respect to the importance we place on the use of epistemic expressions in guiding the hearer towards the intended interpretation. Wilson (2016) states that

[..] the function of evidentials and epistemic modals would be not so much to guide the comprehension process (since the proposition expressed by the utterance would have been understood just as well without them) as to display the communicator's competence, benevolence and trustworthiness to the hearer. (Wilson, 2016: 16)

In addition to displaying the communicator's competence, benevolence and trustworthiness, it seems to me that epistemic expressions do in fact serve an important function in guiding aspects of the comprehension process. More specifically, I propose that speakers use them to guide the aspects of the intended interpretation which pertain to the epistemic status of the proposition in their scope. And I propose that epistemic force expressions (Type (b), (c) and (d) in (8.7)) and epistemic justification expressions (Type (a)) guide the derivation of the assumptions about the epistemic status in slightly different ways.

The speaker may use epistemic expressions to convey how epistemically vigilant she intends the hearer to be towards the truth of the proposition. By using *must* – which encodes partial force – in an utterance of a sentence like *She must be happy* (see Figure 8.1 above), the speaker expresses that whatever beliefs or experience she has, it yields partial force towards the verification of the proposition. By using *must*, she thereby encodes her recommendation on how epistemically vigilant the hearer should be towards the truth of 'she be happy'. For the sake of comparison; if the speaker uses *might* (Figure 8.2) she encodes a recommendation that the hearer be slightly more epistemically vigilant towards the truth of 'she be happy'. Evidentials also trigger epistemic vigilance, but those evidentials which do not restrict epistemic force do not encode a recommendation of how epistemically vigilant the speaker intends the hearer to be. The link between premise and conclusion is therefore one of justification (Boye, 2012a); the proposition's truth is justified by the given type of evidence. That is, the epistemic status of the proposition depends on the reliability of the given type of evidence qua evidence for the truth of what the proposition represents. Therefore, a speaker who uses an evidential expression which encodes a

justification relation intends the hearer to access available contextual assumptions about the source and the propositional content and thereby on the basis of these assumptions derive the intended assumptions about how epistemically vigilant he should be towards the proposition.²²²

The proposal developed in the present section is as follows: an epistemic expression is a linguistic item which encodes a relation between the proposition in its scope and a set of propositions representing epistemic objects, i.e. representations of beliefs or representations of (a type of) evidence. Since the semantics of such an expression restricts the interpretation such that it relates epistemic objects, it triggers mechanisms for epistemic vigilance. The next section employs the proposal in the formation of semantic and pragmatic accounts of various types of epistemic expressions.

8.4 The semantics and pragmatics of epistemic expressions

I shall start with proposing how to account for the semantics and pragmatics of non-modal evidential expressions of the Type (a) in the list in (8.7), i.e. evidentials which do not restrict force lexically. As mentioned above, Ummarmiutun *guuq* is of this type. Before we turn to *guuq*, let us use an English example as illustration in the outline of the pragmatic processes involved in the interpretation of this type of epistemic expression. As Boye (2005) puts it, the meaning of *allegedly* in (8.8) has nothing to do with necessity, disposition or possibility:

(8.8) Bob is allegedly in Berlin.

Just as for *guuq*, the epistemic status in the scope of English *allegedly* is lexically left open. I propose the following semantics for *allegedly*:²²³

²²² It seems that the restriction on justification is procedurally encoded, in that it guides the inferential procedure towards the intended assumptions about the epistemic status of the proposition. In the interest of time and space I shall not dwell further on questions pertaining to the conceptual-procedural distinction here, and rather leave to future research to investigate how individual evidential expressions encode (aspects of) their meaning procedurally or conceptually (see also Chapter 6, §6.3.2).

²²³ It is possible that a thorough study of the meaning and use of *allegedly* would show that a different label than 'report' captures the domain restriction encoded by *allegedly* more precisely. I shall leave the question to studies of evidentiality in English.

(8.9) *allegedly*: D-report epistemically justifies p

Allegedly expresses that there is a relation of justification between a domain of propositions entertained as reports and the proposition p in the scope of *allegedly*. It follows from the domain restriction that the propositions in the domain as well as the proposition in the scope of *allegedly* are used as metarepresentations, because representations of reports are metarepresentations by default.²²⁴ Say that a person A tells another person B that Bob is in Berlin. A's utterance represents a proposition which describes the state of affairs that Bob is in Berlin. After the conversation, B recalls this information about Bob's whereabouts and entertains it as something A has reported to her. The thought of the propositional representation uttered by A is then a representation of A's linguistic representation of a description, and hence a metarepresentation. Given the semantic proposal in (8.9), B's use of *allegedly* in the utterance in (8.8) indicates that the proposition represented by the linguistic material in the scope of *allegedly* is justified by another person's report. That is, the domain of propositions justifying the proposition expressed by *Bob is in Berlin* is a domain of mental representations of another person's linguistic representation of a state of affairs, rather than a domain of first order descriptions of states of affairs.

Allegedly does not restrict the degree of force, but merely conveys that there is a justification relation where the proposition in the scope is epistemically justified by a set of propositions entertained as reports. This explains why a statement like (8.8) in some contexts yields interpretations where the proposition has a high epistemic status, while in other contexts the use of *allegedly* contributes to an interpretation where p has a lower or unsettled epistemic status. *Allegedly* merely encodes a justification relation, while the *communicated* degree of support varies depending on the context. Let us see how that works for an utterance like (8.8).

Suppose that (8.8) occurs in an article in a high quality newspaper. It is reasonable to assume that the journalists of that newspaper have high quality sources, i.e. that they would only write (8.8) if their sources are good indicators that 'Bob is in Berlin' is true. The journalist does not, however, want to take responsibility for the truth of the statement, as it is based on second-

²²⁴ In the relevance-theoretic literature, reportative evidentials are generally analyzed as types of attributive use markers, and attributively used propositions are metarepresentations by default (e.g. Blass, 1989; Sperber and Wilson, 1986/1995: 232). The account put forward here is however different from other relevance-theoretic accounts of hearsay evidentiality in that the latter do not employ domains, justification relations and epistemic forces.

hand information. She therefore indicates the evidence and leaves it to the reader to decide whether this type of evidence leads to the assumption that *p* has a high or a low epistemic status. By using an epistemic expression, she intentionally triggers the reader's argumentation module, more specifically a procedure affecting his epistemic vigilance. This is why evidentials may be used to guide the interpretation towards the communicated epistemic status of the proposition. The journalist has nevertheless not *encoded* how high the epistemic status of *p* is (in her view). She has encoded the type of evidence (reports), she has encoded that there is a justification relation between this and *p*, and then – in the absence of a force restriction – she leaves it to the reader to determine to what degree this type of evidence can be assumed to actually verify the truth of *p*. In (8.8), the journalist probably exploits mutually manifest assumptions about the quality of the newspaper and thereby expects that the reader will access the assumption that the newspaper has good sources and hence assume that *p* has a fairly high epistemic status. Suppose now that (8.8) is uttered by a college student to her friend and classmate. There are 400 students in the class, and Bob's circle of friends does not intersect with the speaker's and hearer's circle of friends. Again *allegedly* leaves the epistemic status open to be determined based on available contextual assumptions. The speaker of (8.8) could reasonably assume that it is mutually manifest that she bases (8.8) on rumors, and that this will lead the hearer to entertain the assumption that *p* has a lower epistemic status. In sum, the epistemic status of *p* in the scope of an expression of epistemic justification is a function of a) contextual assumptions about the state of affairs represented by *p* plus b) contextual assumptions about the information source. The expression only encodes that there is a justification relation between them, and the strength of the epistemic relation depends on mutually manifest assumptions which may be exploited to warrant the derivation of the assumption about the intended communicated epistemic status of *p*.

Let us return to the Uummarmiutun enclitic *guuq*, which also encodes a restriction on evidentiality in terms of hearsay without restricting the degree of epistemic force. This led to the semantic proposal in (8.3) in §8.2, which is similar to the one proposed for *allegedly* in (8.9) above. The semantic proposal for *guuq* correctly predicts that the use of *guuq* may lead to any assumptions about the epistemic status of the proposition, including an epistemic status below neutral (as in (8.5)); the epistemic status of the proposition in the given utterance with *guuq* depends on available contextual assumptions about the source. If it is manifest to the addressee that the reports are attributed to Peter in (8.4), she accesses these contextual assumptions and derives the assumption

that the proposition has a high epistemic status: if the assumption is available that the proposition representing what Peter likes is justified by representations of reports *attributed to Peter*, then there is reason to lower the epistemic vigilance towards the truth of ‘Peter likes caribou’ – given of course that Peter generally speaks the truth about what kinds of food he likes. Contrary, if it is mutually manifest that the reports are attributed to a person who never keeps his word, as in (8.5) (see also (5.20) in Chapter 5), the hearer accesses the assumption that the proposition has a low or even negative epistemic status, i.e. she increases her epistemic vigilance towards p. The speaker may hence use *guuq* in combination with the availability of certain contextual assumptions to convey interpretations where the proposition in the scope of *guuq* has a certain epistemic status.²²⁵

So far the pragmatic processes involved in the interpretation of expressions of epistemic justification have been considered (i.e. Type (a) in (8.7)). With this pragmatic account in hand, we are now ready to revisit the epistemic expressions which restrict epistemic force (Type (b), (c) and (d)) and compare their effect on epistemic vigilance with the expressions restricting epistemic justification. Contrary to epistemic expressions like *allegedly* (Type (a)), expressions that do restrict the degree of force (Type (b), (c) and (d)) come with an instruction of *how* epistemically vigilant the hearer should be (according to the speaker). This is the case for *niq* ‘apparently’ (Type (b)), because *niq* encodes a restriction on full epistemic force in addition to its evidential restriction. Contrary to the evidentials without force restrictions, the use of *niq* does not merely trigger epistemic vigilance and leave it to the hearer to assess how epistemically vigilant she should be towards the truth of the proposition based on the type of evidence and the propositional content. *Niq* comes with an encoded instruction on *how* epistemically vigilant the hearer should be; the evidence is sufficient to yield full force towards the truth of the proposition, and hence the use of *niq* suggests that the hearer lowers her epistemic vigilance.

²²⁵ Also Berthelin (2017) recognizes that contextual assumptions about the source, i.e. the reporter, affect the epistemic status of the proposition in the scope of *guuq* in North Slope Iñupiaq. However, Berthelin (ibid.) gives a semantics for North Slope Iñupiaq *guuq* which includes a restriction on epistemic force. The force restriction is at best superfluous. Given Berthelin’s (ibid.) data, North Slope Iñupiaq *guuq* is similar to Uummarmiutun *guuq* in that it is really the assumptions about the reporter in relation to the proposition which determines the epistemic status of the proposition – not an encoded force restriction. At worst, the proposed force restriction on North Slope Iñupiaq *guuq* falsely predicts that the suggestion on how epistemically vigilant the hearer should be is a result of the code in combination with pragmatic considerations rather than pragmatic processes alone. Given Berthelin’s (2017) data, it seems that the semantics provided for Uummarmiutun *guuq* here in the semantic proposal in (8.6) would be appropriate for North Slope Iñupiaq *guuq*.

Like *niq* (Type (b) in (8.7)), epistemic modal expressions (Type (c) and (d)) also come with an instruction on how epistemically vigilant the hearer should be, since epistemic modals by definition restrict epistemic force (to less than full or a sub-type thereof). *Hungnaq* ‘probably’ (Type (d)), for instance, with its restriction on less than full force comes with a suggestion on how epistemically vigilant the hearer should be; the beliefs constituting the modal domain are sufficient for yielding less than full force towards p. Also English *might* (Type (d)), for instance, comes with a suggestion on how epistemically vigilant the hearer should be with its restriction on neutral force. Here the set of beliefs constituting the modal domain are sufficient for yielding neutral force towards p.

We now turn to the semantics and pragmatics of evidentials with modal restrictions, i.e. expressions which encode a restriction on modal force *plus* a restriction on information source (Type (c)). The Lega-Shabunda expression *ámbo* expresses reportative evidentiality plus less than full epistemic force (see Botne in Boye, 2012a: 75-77). Given the description in Boye’s (2012a) book, the semantic representation of *ámbo* looks as follows within the model proposed here:

(8.10) *ámbo* : D-report yield **less than full force** towards p

For *ámbo*, the degree of force is not left open; it is specified lexically in accordance with the apparent convention that this expression is used to convey less than full certainty. Like Uummarmiutun *guuq* and English *allegedly*, *ámbo* expresses an epistemic relation between the proposition in its scope and a domain of propositions entertained as reports. However, unlike *guuq* and *allegedly*, the degree of force conveyed by utterances with *ámbo* is not a result of mutually manifest assumptions about the quality of the evidence plus the state of affairs metarepresented by the proposition. The degree of force is lexically restricted by *ámbo* as reflected in the semantic proposal. When the interest lies in modality, *ámbo* groups with Uummarmiutun *hungnaq* ‘probably’ and English *must* and *may*, because all of these restrict modal force and hence fall in the category of modal expressions. When the interest lies in evidentiality, *ámbo* groups with *guuq*, *niq* and *allegedly*, since these all restrict the domain to representations of evidence. And finally, if the interest lies in the difference between semantic restrictions on epistemic vigilance on the one

hand and pragmatic inference of degree of epistemic vigilance on the other, *ámbo*, *hungnaq*, *niq*, *must* and *may* fall in the former category, whereas *guuq* and *allegedly* fall in the latter.

Table 8.2 below summarizes how various epistemic expressions relate to the parameters utilized in the present section, namely epistemic vigilance, relation to the domain, and evidentiality. The orange line marks the modal expressions to facilitate an overview of what epistemic modal expressions have in common with other epistemic expressions and how they differ. The table includes a type of epistemic expression which has not been discussed in the present chapter, namely ‘Type (e)’. English *certainly* arguably restricts full epistemic force from a domain of beliefs without explicitly evoking the idea of a piece of evidence. English *certainly* hence seems to suggest a fifth type of epistemic expressions which are non-modal and non-evidential, but indeed epistemic.

Table 8.2: Types of epistemic meanings

Epistemic vigilance	Relation to domain	Evidential restrictions	No evidential restrictions
Degree of epistemic vigilance is encoded	Epistemic force: Neutral, partial or less than full	Type (c) in (8.7) Lega-Shabunda <i>ámbo</i> D-report	Type (d) in (8.7) Uummarmiutun <i>hungnaq</i> D-belief English <i>must</i> (epistemic sense) D-belief English <i>might</i> D-belief
	Epistemic force: Full	Type (b) in (8.7) Uummarmiutun <i>niq</i> D-evidence	Type (e) English <i>certainly</i> D-belief
Degree of epistemic vigilance is a function of the encoded justification relation plus contextually available assumptions about the evidence type in relation to the propositional content	Epistemic justification	Type (a) in (8.7) Uummarmiutun <i>guuq</i> D-report English <i>allegedly</i> D-report	-

8.5 Summary

The relationship between evidential meaning and epistemic modal meaning is a topic that has received significant attention in the linguistics literature. This chapter has therefore been devoted to an exploration of how the account of modal meaning proposed in the present thesis relates to the handling of evidential meaning.

The chapter has shown how the revised version of Papafragou's (2000) model, which employs Boye's (2012a) division of forces, can be used to form precise semantic proposals not only for root and epistemic modals, but also for epistemic modals with restrictions on evidentiality as well as non-modal evidentials. While epistemic modals relate the proposition in their scope to a domain of beliefs, evidential expressions relate the proposition in their scope to a domain of representations of evidence. Both of these types of domain restriction are inherently epistemic, because beliefs and evidence can affect epistemic verification – not the actualization of a state of affairs as in the case of root modals. The chapter has proposed that evidential restrictions are appropriately reflected in a semantic proposal as restrictions on the domain. More importantly, it turns out that a lexical semantics for an epistemic expression phrased within the proposed model clearly reflects whether the expression in question is modal, evidential or both. This is mainly because the proposed model reflects restrictions on the relation to the domain in terms of degrees of force in the sense of Boye (2012a), and because the lack of a restriction on force on the relation may be appropriately captured as epistemic justification. The decision on whether to include force restrictions – i.e. restrictions on a certain degree of epistemic force towards *p* as opposed to a restriction on justification for *p* – in the semantics of an evidential should depend on the following considerations:

Does the evidential *E* vary between interpretations where there is full, partial or neutral force towards the verification of *p*?

- (1) Yes: The degree of epistemic force depends on the context. Assumptions about the epistemic status of *p* are conveyed as implicatures rather than being encoded. More precisely, degree of epistemic force is a function of mutually manifest assumptions about the quality of the evidence in relation to the state of affairs metarepresented by the utterance.
- (2) No: Any interpretation of the given evidential includes the assumption about a certain degree of epistemic force. In that case, *E* encodes a restriction on epistemic force. *E*

is a modal evidential if the force restriction is less than full (or a sub-type thereof). E
is a non-modal evidential if the force restriction is full.

Outcomes like (1) favor a semantic proposal like the one proposed for *allegedly* ‘hearsay’ and *guuq* ‘hearsay’, where the relation between domain and modified proposition is one of justification. If the outcome is (2), the force is appropriately specified in the semantics. A force restriction does however not necessarily make the expression modal; some evidentials restrict full force, and hence they restrict epistemic force to a non-modal force. A case in point is Uummarmiutun *niq* ‘apparently’. Other evidentials, e.g. Lega-Shebunda *ámbo* ‘hearsay’ restrict epistemic force to a modal force.

The present chapter has provided a sketch of how to form precise semantic proposals for epistemic modals, evidentials and evidential modals.²²⁶ A more interesting difference for pragmatics, however, is not the distinction between evidentiality and epistemic modality, as this is merely a difference in terms of whether the domain is restricted to propositions entertained as beliefs or propositions entertained as evidence. For pragmatic analysis, a much more interesting distinction is between linguistic expressions that encode a restriction on epistemic force – be it an epistemic modal force or full epistemic force – on the one hand, and linguistic expressions which encode a restriction on epistemic justification on the other. This is so, because these different semantic properties feed into pragmatic processes in slightly different ways, while they are similar in that their interpretations pertain to the epistemic status of the proposition in their scope.

The chapter has proposed a cognitive pragmatic account for the similarities and differences between these two types of epistemic expressions through the employment of the relevance-theoretic notion of epistemic vigilance (Sperber et al. 2010; Wilson, 2011): general mechanisms for epistemic vigilance are triggered in different ways by expressions restricting force and expressions restricting justification respectively. By using an expression which lexically restricts the relation to the domain to a certain degree of epistemic force (e.g. Uummarmiutun *niq* ‘apparently’ and *hungnaq* ‘probably’, English *may* and *must*), the speaker encodes how epistemically vigilant she recommends the hearer to be towards the proposition in

²²⁶ And possibly also for non-modal, non-evidential epistemic expressions, given that English *certainly* is appropriately described as full force from a domain of beliefs.

the scope of the expression. Expressions which restrict justification also trigger epistemic vigilance (e.g. Uummarmiutun *guuq* 'hearsay', English *allegedly*) by virtue of being epistemic expressions. The degree of suggested epistemic vigilance is nevertheless not encoded, but rather derived on the basis of contextual assumptions about the propositional content in relation to the evidence type. By using an epistemic expression which restricts the relation to epistemic justification, the speaker thereby leaves it to the hearer to assess the type of evidence in relation to the propositional content and contextual assumptions, and the communicated recommendation on how epistemically vigilant the hearer should be is thus inferred rather than encoded.

Chapter 9:

Summary

9.1 The contribution

The present study has made four main contributions to the field of linguistics and the study of modality. First, it has provided more precise descriptions of modal expressions in the Inuktitut dialect Uummarmiutun and given in-depth accounts of the semantics and pragmatics of four of them, namely *řukřau* ‘should’, *hungnaq* ‘probably’, *huk* ‘inner force’ and *lla* ‘can’. These descriptions and accounts were based on data collected with native speakers of the language.²²⁷ Second, through a review of existing conceptions of modality from the formal and the cognitive literature, the study has identified unrealized force-dynamic potential (Boye, 2005) as the appropriate definition of modality, tested its usefulness in semantic fieldwork, and its validity on Uummarmiutun data. Third, the thesis has improved how modal semantics and pragmatics are handled within the cognitive pragmatic framework of relevance theory by extending the cross-linguistic applicability of Papafragou’s (2000) model through insights from Boye (2005, 2012a) and the application on Uummarmiutun data. The proposed revised model moreover turns out to be applicable to evidentials, and thereby it handles the semantic and pragmatic properties of various types of epistemic expressions in addition to epistemic modals. Finally, the thesis has contributed to the young but growing body of literature on semantic fieldwork with an outline and discussion of various elicitation frames and the demonstration of their applications.

The remainder of the chapter gives an overview of these contributions. §9.2 summarizes the conclusions regarding the definition of modality, and §9.3 summarizes the descriptive results. §9.4 mentions the proposed revisions of Papafragou’s (2000) framework and their benefits, and

²²⁷ Special thanks to Panigavluk, Mangilaluk and the late Kavakluk.

§9.5 summarizes the semantic and pragmatic accounts of Uumarmiutun modals made possible with the revised model. §9.6 summarizes the main methodological considerations and insights from the present study.

9.2 The conception of modality and modal expressions

The linguistics literature has paid significant attention to the study of modality, and several attempts have been made to define and conceive of the category of modal meaning. For this reason, the thesis performed a review of existing conceptions of modality from various theoretical traditions (see Chapter 3, §3.3) in order to find an appropriate definition of the category to be employed in the identification of Uumarmiutun modal expressions. The review led to the conclusion that Boye's (2005) definition of modality as *unrealized force-dynamic potential* is the most suitable among the definitions of modality available in the literature:

Definition of modality (repeated from §3.4.1)

'Modality' is meaning which is appropriately conceived of as unrealized force-dynamic potential. Modal meaning evokes the idea of a source which produces a force pushing an agonist towards a goal (see Boye, 2005).

This definition in turn enabled the definition of a modal expression as one that restricts all interpretations in terms of unrealized force-dynamic potential:

Definition of a modal expression (repeated from §3.4.1)

A modal expression is a linguistic form which encodes unrealized force-dynamic potential. This means that it evokes the idea of a source which produces a less than full force towards actualization or verification of the predicational content.

Unrealized force dynamic potential corresponds to less than full force or a sub-type thereof (e.g. neutral or partial force). With the distinction between full and less than full force, the definition of modality as unrealized force-dynamic potential avoids problems inherited from philosophical modal logic pertaining to the application of 'modal necessity' and related notions to linguistic meanings (recall §3.3.3). For similar reasons, the notion of force in the sense of Boye (2005, 2012a)

later on in the thesis proved useful to the conception of restrictions on modal force in the semantic proposals (see Chapter 6, §6.4.2, and Chapter 7).

The unrealized force-dynamic potential definition was found to be rich enough to allow the recognition of modal meaning when it occurs in an interpretation and rigid enough to distinguish modal meaning from neighboring meanings like evidentiality, full certainty and causativity (see §3.4, especially Figure 3.6 in §3.4.3). The conclusions regarding whether or not the respective Uummarmiutun expressions under investigation are modal were thereby made possible through the employment of Boye's (2005) definition of modal meaning as unrealized force-dynamic potential. In return, the thesis has confirmed the validity of the definition through the very application on Uummarmiutun expressions in a fieldwork situation: the thesis has shown that the definition can be successfully employed a) in the *collection* of the data necessary for determining whether an expression is modal, and if so, which modal concepts it can be used to express, and b) in the *discussion* of the collected data in the pursuit of determining whether a given expression is modal.

9.3 Descriptive results

The thesis has proposed an in-depth semantic and pragmatic account of the four modal postbases *řukřau*, *hungnaq*, *huk* and *lla*. The account is based on refined descriptions of which meanings are covered by the respective expressions. These descriptions are listed below. The force-dynamic terminology (see Boye, 2005, 2012a) was used throughout the presentation of the data in Chapter 5 to ensure a precise description of the modal concepts covered by the respective expressions. For readers unfamiliar with force-dynamic terminology, the traditional modal notions are inserted in brackets after the force-dynamic labels.

Řukřau is described by Lowe (1984) as 'must, has to'. In §5.3.1, the present study has shown that (a) unlike English *must*, which figures in Lowe's dictionary entry, *řukřau* is lexically restricted to root modality, more specifically partial social force ('deontic necessity'), and (b) *řukřau* may be on its way to develop hearsay evidential meaning, but this meaning is not appropriately analyzed as part of the meaning encoded by *řukřau*.

Hungnaq is described by Lowe (1984) as ‘probably’. In §5.3.2, the study has (a) confirmed that *hungnaq* indeed is a modal expression, (b) shown that *hungnaq* is restricted to less than full epistemic force (epistemic ‘possibility’ plus ‘necessity’) and c) shown that the meaning of *hungnaq* is incompatible with any hypothesis that treats this modal as an evidential expression along the lines of von Fintel and Gillies’ (2010) account of English *must*.

Huk is described by Lowe (1984) as ‘to want to’. In §5.3.3, the present study has shown that *huk* – like postbases with similar meaning in other Inuktitut dialects (Johns, 1999) – is in fact not restricted to volitional force or to the subject referent’s desires (‘bouletic’ modality). Rather, *huk* merely restricts the location of the modal source such that it is internal to the subject referent. This captures the linguistic realities of *huk*, which can combine with inanimate subject referents to yield interpretations where the modal source is a general property internal to the subject referent rather than desires.

Lla is described as ‘to be able to, can’ in Lowe (1984). In §5.3.4, the present study confirmed that *lla* is restricted to this meaning, more specifically to neutral physical force (‘dynamic possibility’), while it may also be used to convey permission interpretations (‘deontic possibility’). The study has additionally shown that utterances with *lla* can be used to convey epistemic meaning in some contexts, however via implicature. The data on how *lla* combines with negation confirmed the conclusion that epistemic modal uses are not part of the lexical meaning.

In addition to the in-depth investigations of *řukřau*, *hungnaq*, *huk* and *lla*, the thesis has provided analyses of data on eight more expressions in Uummarmiutun, which appear to have modal meaning given their entries in the Uummarmiutun dictionary (Lowe, 1984). Among these eight expressions, the following six turned out to have modal meanings: *luuniin*, *kiaq*, *ahulu*, *yumaaq*, *viaq* and *yumiñaq*. The available data on these expressions is sufficient to draw conclusions with respect to their appropriate categorization as modal expressions, as well as some conclusions regarding their meaning and use. Semantic proposals and pragmatic accounts of these

six modals will nevertheless have to await future research. The preliminary findings regarding the meanings covered by *luuniin*, *kiaq*, *ahulu*, *yumaaq*, *viaq* and *yumiñaq* are summarized below (see Chapter 5, §5.2, for details):

The clitic <i>luuniin</i> :	- Neutral epistemic force - Disjunctive connective
The clitic <i>kiaq</i> :	- Less than full epistemic force - ‘I wonder’
The free form <i>ahulu</i> :	- Less than full epistemic force - Response word expressing endorsement
The postbase <i>yumaaq</i> :	- Partial root force from a subject-internal source
The postbase <i>viaq</i> :	- Neutral epistemic force, restricted to future
The postbase <i>yumiñaq</i> :	- Neutral social force and neutral physical force, requires identification of the modal source

The clitic *guuq* and the postbase *niq* turned out to be non-modal evidential expressions. The meanings covered by *guuq* and *niq* are as follows:

The clitic <i>guuq</i> :	- Hearsay evidentiality - Epistemic force varies depending on the context
The postbase <i>niq</i> :	- Mediative evidentiality - Full epistemic force

The available data on *niq* and *guuq*, turned out to be rich enough to form semantic proposals and to inform the sketch in Chapter 8 of how the model that was proposed for capturing modal semantics and pragmatics can a) also be used to capture semantic and pragmatic properties of non-modal epistemic expressions, and b) phrase semantic proposals which clearly reflect whether the given expression is modal or not.

9.4 A model for modal semantics and pragmatics

The thesis has employed the relevance-theoretic framework (Sperber and Wilson, 1986/1995; Carston, 2002) in order to ensure that pragmatic processes are taken into account in the formation of the lexical semantic proposals for the Uummarmiutun modals in focus of the study. Relevance theory is strictly speaking a theory of pragmatics. However, modal expressions are highly polyfunctional, and Uummarmiutun modals are no exception. As shown in Chapter 5, one and the same modal expression may give rise to different interpretations in different contexts. This raises questions regarding which aspects of a given interpretation are part of the semantically encoded meaning of the expression on the one hand, and which are better accounted for as results of pragmatic inference on the other. The thesis has thus illustrated that a precise semantic proposal for a modal expression requires attention to the pragmatic processes involved in the derivation of context-specific interpretations of utterances containing these abstract expressions.

Within relevance theory, Papafragou (2000) offers a promising model for modal semantics. On Papafragou's (2000) original account, outlined in §6.3.3, a modal expression encodes a relation *R* of either compatibility or entailment between a) a domain of propositions *D* entertained in a certain way, and b) the proposition *p* in the scope of the modal. Papafragou's (2000) account is developed on the basis of English modal auxiliaries. Nevertheless, the specific domain restriction encoded by a given modal expression is an empirical question (Papafragou, 2000: 42-43), and this aspect makes her model a promising one for cross-linguistic application. When a modal is used in an utterance, the modal domain may be adjusted in accordance with the principle of relevance. Papafragou (2000) thereby offers a model for explaining how the semantics of a modal interacts with pragmatic principles in the derivation of context-specific interpretations. Nevertheless, as pointed out in §6.4.1, it turned out that some revisions were necessary in order to capture the semantics and pragmatics of Uummarmiutun modals. Through the application of Papafragou's (2000) model on Uummarmiutun data, the present thesis has proposed revisions which extend its cross-linguistic applicability. These revisions not only pave the way for accounting for modals without root-epistemic overlap like those in Uummarmiutun – they also improve accounts of root-epistemic overlapping modals which are common in Indo-European languages of Europe, as argued in §6.4.4.3.

The proposed adjustments of Papafragou's (2000) original model pertain to the following areas: 1) restrictions on attribution, 2) force restrictions, 3) how to capture non-overlapping modals and 4) the lexical structure of root-epistemic overlapping expressions. The benefits of the proposed adjustments are summarized below, and the reader is referred to Chapter 6 for further details and arguments.

Attribution

As for the proposal concerning attribution, this was a natural extension of Papafragou's (2000) own statement that propositions in a domain – e.g. the desirability domain – may be attributed to somebody. The thesis a) identified three modal expressions for which a restriction on attribution is necessary for capturing their encoded meaning; Ummarmiutun *huk* and Persian *bešavad* and *betâvan*, and b) proposed that attribution restrictions are reflected in the semantic proposal as a restriction on attribution of the propositions in the modal domain in addition to how they are entertained (see Chapter 6, §6.4.3.2, and Chapter 7, §7.4).

Modal force

On Papafragou's (2000) original proposal, modal relations – i.e. the relation between the modal domain and the proposition in the scope of the modal – are specified as either compatibility or entailment. The thesis proposed in Chapter 6, §6.4.2, that the modal relation is rather understood in terms of degree of force in the sense of Boye (2012a), and that the individual restrictions on force encoded by modal expressions are specified as such in the semantic proposals. This understanding of modal force proved to have at least three benefits. First, the entailment and compatibility dichotomy does not accurately apply to modals that are not lexically restricted to one of these traditional modal forces. The degree of force conception of the modal relation, on the other hand, allows us to specify the force restriction on varying force modals like Ummarmiutun *hungnaq* 'probably' as 'less than full force' rather than employing a questionable super-concept of 'compatibility-entailment'. The second benefit is that the force divisions are more in accordance with the meaning conveyed by linguistic modal expressions than the dichotomy of compatibility and entailment, which suffers from the same problems as the possibility and necessity dichotomy. The third benefit of specifying the modal relation as degrees of force in the semantic proposal is

that the proposed model can then be used to form lexical semantics for linguistic expressions which encode full epistemic certainty, such as Uummarmiutun *niq* ‘apparently’. As argued in Chapter 8, those expressions also evoke the idea of a source which affects the verificational potential of the proposition – just like epistemic modals do – and hence they should lend themselves to a semantic proposal that reflects this similarity while observing how they are different from epistemic modals. It is not clear how the entailment-compatibility dichotomy employed in Papafragou’s (2000) original account could reflect this in a cognitively plausible way. The proposed model distinguishes between partial and full epistemic force (see Boye, 2012a), and thereby clearly reflects the distinction between a strong modal as partial force, and an expression of full epistemic certainty as full force.

Related to this third benefit is the proposed option of specifying the relation between domain and proposition in terms of epistemic justification instead of epistemic force (Boye, 2012a) in a semantic proposal. Chapter 8 demonstrated that semantic proposals for evidentials whose epistemic strength depends on the context (e.g. Uummarmiutun *guuq* ‘hearsay’) appropriately include a restriction on epistemic justification. This led to a cognitive pragmatic account of epistemic expressions which argued that all epistemic expressions – regardless of whether they are modal, evidential or both – trigger epistemic vigilance (Wilson, 2011, 2012; Sperber et al. 2010) and hence affect the interpretation with respect to the epistemic status of the proposition in their scope.

Non-overlapping modals

As shown in Chapter 5, Uummarmiutun is among the languages of the world with non-overlapping modals. The data analyses showed that the meaning of Uummarmiutun *řukřau* corresponds to *should* in that it relates the proposition in its scope to a domain of normative propositions. But unlike *should*, epistemic meanings are not part of the meaning lexically encoded by *řukřau* (see Chapter 5, §5.3.1). Also *huk* (see §5.3.3) and *lla* (see §5.3.4) turned out to be lexically restricted to root modal meaning, and *hungnaq* (see §5.3.2) turned out to be restricted to epistemic modal meaning. These observations posed the need to determine how restrictions on either root or epistemic meaning are appropriately reflected in a semantic representation. Chapter 6, §6.4.3, proposed a solution based on the hypothesis that a restriction on how the propositions in the domain

are entertained is inherently connected to *either* root *or* epistemic meaning. On this proposal, a lexical restriction on a factual, normative, or desirability domain is inherently a restriction to root meaning, while a restriction on a belief domain is inherently a restriction on epistemic meaning. An expression like Uummarmiutun *řukřau* ‘should’, for instance, which encodes a restriction on the normative domain without encoding epistemic meaning, is therefore successfully described as lexically restricted to the normative domain.

This proposal has some implications for root-epistemic overlapping modals like English *must*, *may* and *should* and German *sollen* ‘should, hearsay’ and *wollen* ‘want, hearsay’. If all domain restrictions are inherently connected to *either* root *or* epistemic meaning, the question is what a domain restriction looks like for a modal with a lexical semantics that covers both epistemic *and* root meaning. This takes us to the final proposal put forward in the thesis regarding the representation of modal semantics.

The lexical structure of root-epistemic overlapping expressions

§6.4.4 proposed that modals that conventionally encode root plus epistemic meanings are cases of what I have called ‘split polysemy’. Split polysemy is to be distinguished from polysemy in the sense of lexical adjustment (see Falkum, 2011, 2015), because the senses are conventionally stored within the split polysemous lexical item. The hypothesis that root-epistemic modals are cases of split polysemy acknowledges the connection between the senses stored in the linguistic item, and it is compatible with cross-linguistic observations regarding the diachronic change from root-only meaning to root-epistemic overlap (see Bybee et al. 1994). The hypothesis put forward regarding the pragmatic processes involved in the diachronic change of root-epistemic modals is based on Falkum’s (2015) hypothesis regarding the development of *chicken* from conventionally denoting the animal into conventionally denoting the animal *or* the meat. The proposed notion of split polysemy is hence assumed to be applicable to other cases of ambiguity beyond root-epistemic overlap.

The split polysemy proposal allows us to stick to the hypothesis that all domains are inherently connected to either root or epistemic meaning without the implication that the framework fails to capture root-epistemic overlapping modals: the individual senses stored in the lexical entry for a root-epistemic overlapping modal simply each have their own domain restriction.

Moreover, it turned out that the split polysemy hypothesis in fact allows for the formation of more accurate semantic proposals for root-epistemic overlapping expressions. As shown in §6.4.4.3, some modals, e.g. English *may* and German *sollen*, restrict their root uses in ways that do not apply on their epistemic uses. A monosemous semantics would either have to exclude those restrictions, and thereby fail to capture linguistic conventions, or it would falsely predict that restrictions on the root uses apply to the epistemic uses as well. If the root and epistemic senses are simply stored on separate conceptual addresses within the lexical entry, we can clearly reflect the appropriate restrictions on one sense without making false predictions for the other. As noted above, none of the Uummarmiutun expressions in focus of the study display lexical root-epistemic overlap. However, some modal expressions in other languages of the world do display root-epistemic overlap, and some of the Uummarmiutun root modals may be on their way to conventionalizing epistemic meanings in addition to their root meanings. The revised version of Papafragou’s (2000) model is thereby applicable to the possible future linguistic realities of Uummarmiutun as well as current realities cross-linguistically.

9.5 The semantics and pragmatics of Uummarmiutun modals

Based on knowledge shared by speakers of Uummarmiutun, insights from Boye (2005; 2012a) and the revised version of Papafragou’s (2000) model proposed in Chapter 6, Chapter 7 proposed the following semantics for the modals *řukřau* ‘should’, *hungnaq* ‘probably’, *huk* ‘inner force’ and *lla* ‘can’:

<i>řukřau</i> :	D-normative	yield	partial force	towards p
<i>hungnaq</i> :	D-beliefs	yield	less than full force	towards p
<i>huk</i> :	D-descriptions-subj.-internal	yield	partial force	towards p
<i>lla</i> :	D-factual	yield	neutral force	towards p

The semantic proposals for the four modal expressions are explicated below along with summaries of the pragmatic processes involved in deriving their context-specific interpretations.

Ĥukĥau ‘should’ relates the proposition in its scope to a domain of propositions entertained as descriptions of norms. This modal domain yields partial force towards the *actualization* of p (root meaning) since norms are states of affairs, and states of affairs can affect actualizations of other states of affairs – not the verification of propositions. According to some consultants, *ĥukĥau* may be used to express hearsay evidential meaning. Due to morphosyntactic evidence as well as the observation that not all consultants accept hearsay evidential meanings of utterances with *ĥukĥau*, the conclusion is that these are not part of *ĥukĥau*’s encoded meaning. When hearsay evidential interpretations do occur, it is a result of broadening of the modal domain in accordance with the principle of relevance (see Chapter 6, §6.2). Propositions entertained as norms are inherently attributed to a body other than the subject. The hypothesis put forward in §7.2 is that the modal domain restricted by *ĥukĥau* is broadened from the set of propositions entertained as norms to a broader set of propositions entertained as externally attributed, which also includes propositions which are beliefs attributed to other people e.g. reports. The semantic proposal for *ĥukĥau* together with the pragmatic process of broadening regulated by the principle of relevance thereby predict that *ĥukĥau* can be used to convey hearsay evidential interpretations. It is possible that in the future, the hearsay evidential sense sometimes warranted in interpretations of utterances with *ĥukĥau* will be conventionalized and stored on its own conceptual address along with the normative sense, such that *ĥukĥau* becomes a case of split polysemy. In such an event, the evidential interpretations would not be accessed as a result of pragmatic broadening, but as a result of homing in on the evidential sense stored on the lexical address of *ĥukĥau*, similarly to how the normative interpretations would be accessed.

Hungnaq ‘probably’ relates the proposition in its scope to a set of propositions entertained as beliefs. This modal domain yields less than full force towards the *verification* of p (epistemic meaning) since beliefs are epistemic objects and as such they can affect the verificational status of a proposition – not its actualizational potential. As shown in §7.3, the restriction on less than full force correctly reflects that *hungnaq* can be used to express neutral as well as partial force or be unsettled between these two meanings.

Huk ‘inner force’ relates the proposition in its scope to a set of propositions representing descriptions of states of affairs internal to the subject referent. The modal domain yields partial force towards the actualization of p. Subject-internal *attribution* is not a domain restriction similar to e.g. ‘normative’, ‘factual’ or ‘belief’, which by default restrict the given expression to either root

or epistemic meaning. The specification of the domain as containing *descriptions* is therefore necessary in order to correctly predict that *huk* is restricted to root modal meaning.²²⁸ As outlined in §7.4, the domain of propositions representing subject-internal properties can be narrowed down in accordance with the principle of relevance to a more specific set of the subject referent's emotional properties and thereby yield the desirability interpretations observed in the dataset. The domain may also be narrowed down to physical properties of the subject referent, e.g. when the subject referent is inanimate. The semantic proposal that *huk* encodes a restriction on partial force from a domain of descriptions of something subject-internal, together with the pragmatic process of narrowing regulated by the principle of relevance, thereby predicts the various interpretations observed for utterances with *huk* in the dataset.

Lla 'can' relates the proposition in its scope to a set of propositions entertained as descriptions of facts. This modal domain yields neutral force towards the actualization of p (root meaning) since facts are states of affairs and states of affairs can only affect actualizations. As argued in §7.5, the permission interpretations of *lla* observed in the data set are best explained as results of pragmatic narrowing regulated by the principle of relevance. This is so because *lla* appears to be slightly more closely associated with the factual domain – e.g. facts about the subject's intellectual or physical properties, or surrounding circumstances – than with the notion of norms as such. However, *lla* may indeed be used to give rise to permission interpretations. These interpretations are nevertheless predictable on the basis of the restriction to the factual domain, because a restriction on the factual domain predicts that propositions describing any factual state of affairs can constitute the modal domain of *lla*. Therefore, permission interpretations arise when the domain of *lla* is narrowed down in accordance with the principle of relevance such that it is constituted by facts about norms or regulations or other preferences attributed to an authority. The association of *lla* with the factual domain as well as the availability of permission interpretations can thus be accounted for through the semantic proposal, pragmatic narrowing and the principle of relevance. The data set also showed that *lla* can be used to convey epistemic interpretations. However, the morphosyntactic evidence suggest that epistemic meaning is not part of the encoded

²²⁸ Recall that propositions used as descriptions are first order descriptions of states of affairs in contrast to propositions entertained as beliefs which are metarepresentations and hence mental objects which can affect verification (see §6.3.3.2 for details). In the absence of the restriction on descriptions, the semantic proposal would falsely predict that *huk* allows subject-internal attribution of beliefs, i.e. hearsay interpretations similar to those available for German *wollen* 'want, hearsay'.

meaning of *lla*. Epistemic interpretations of utterances with *lla* arise when the search for an optimally relevant interpretation requires the hearer to draw an inference based in the proposition expressed by the utterance. When factual states of affairs yield neutral force towards the actualization of a state of affairs, the future verification of this state of affairs is also epistemically possible. The hypothesis put forward in §7.4 was therefore that a speaker may use an utterance with *lla* and expect the hearer to draw this inference in order to arrive at the interpretation the speaker intended to convey. In the event that these epistemic implicatures are warranted so many times that the pragmatic route becomes routinized, an epistemic sense may acquire its own conceptual address within the lexical entry for *lla* together with its present day semantics. In that case, *lla* will have become a case of split polysemy.

Due to the debate on the relationship between epistemic modality and evidentiality in the linguistics literature as well as the discovery that two of the Uummarmiutun expressions investigated for modal properties turned out to be (non-modal) evidentials, the thesis has paid some attention to evidential meaning. This resulted in a sketch of the semantics and pragmatics of various types of epistemic expressions in Chapter 8. The semantic proposals for the two non-modal evidential expressions *niq* ‘apparently’ and *guuq* ‘hearsay’ clearly reflect that they are not modal, because modals restrict epistemic force to less than full force or a sub-type thereof. *Niq* and *guuq*, on the other hand, restrict full force and epistemic justification respectively. Their evidential restrictions are captured as restrictions on the domain:

<i>guuq</i> :	D-report		epistemically justifies	p
<i>niq</i> :	D-evidence	yield	full force	towards p

Chapter 8 identified similarities and differences among various types of epistemic expressions. Most importantly, it was shown that all epistemic expressions trigger epistemic vigilance and thereby affect the interpretation with respect to the epistemic status of the proposition in their scope. The difference is that epistemic force expressions (i.e. full epistemic force expressions as well as epistemic modals) come with a recommendation on how epistemically vigilant the hearer should be. As for epistemic expressions restricting justification, on the other hand, epistemic vigilance is

a function of contextual assumptions about the type of evidence in relation to contextual assumptions about the propositional content.

9.6 Methodological insights

The data set forming the foundation of the present thesis is a collection of knowledge and reflections about word meanings and utterance interpretations shared with me by native speakers of Uummarmiutun. The choice to work with this type of data is connected to the nature of the research questions, which pertain to linguistic meaning. Linguistic meaning is not directly observable (Bohnemeyer, 2015). Contrary to phonological or syntactic analyses, which may be based – at least partly – on observations of patterns in strings of the language under description, sentences and texts in a given language do not reveal direct information about the meaning of their elements (Bochnak and Matthewson, 2015). Speakers of a language, on the other hand, know the meanings of the expressions in their language by virtue of being able to employ them to convey meaning to other speakers. For this reason, the present study is based on interviews with native speakers of Uummarmiutun. However, the generalizations we employ when we speak a language, and especially the exact meaning of abstract expressions like modals, are hard to identify (e.g. Matthewson, 2004; Bochnak and Matthewson, 2015; Deal, 2015). Moreover, as we have seen throughout the thesis, the interpretations of modal statements vary depending on the context, thus posing an extra challenge to identifying the exact range of meanings a modal can be used to express. These challenges of semantic fieldwork were met by choosing a range of different elicitation frames to help the researcher plan a systematic investigation of the expressions in question as well as to facilitate the consultants in explaining and elaborating on the meaning of the modal expressions in their language.

Chapter 4 provided presentations and illustrations of the elicitation frames employed in the present study. Some of these are mentioned in Bohnemeyer (2015), while others were added. The explicit methodological considerations along with the detailed presentation of the elicitation frames were intended to ensure methodological transparency. It is furthermore my hope that the concrete exemplification of the individual elicitation frames, paired with reflections on how they are appropriately employed to answer a select set of research questions, can be of use to other

researchers and community based Language Specialists in their exploration of how abstract meanings are expressed in other languages. One of the most valuable insights from the present data collection was that the type of elicitation frame has to be chosen according to the preferences of the individual consultant. Some consultants may prefer translation work, either into the language under description or the metalanguage. Other consultants may prefer to judge the appropriateness of a sentence in relation to a scenario, while others again may prefer to describe scenarios where an utterance with the expression under investigation can be appropriately uttered.

Given the nature of the data it was judged appropriate to present quotes from the interviews. This decision resulted in data points, which are longer and messier than what is common practice in the literature. However, the positive sides seem to outweigh the possible downsides: using quotes from the interviews facilitates transparency by showing the basis for the analyses. Moreover, given the chosen format, the data may be used to test and extend the cross-linguistic applicability of new or existing frameworks from other theoretical camps. Most importantly, the data points show how the speakers of the language themselves have chosen to explain the meaning and use of the linguistic expressions in their language.

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