

# Two Uummarmiutun modals – including a brief comparison with Utkuhikšalingmiutut cognates\*

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The paper is concerned with the meaning of two modal postbases in Uummarmiutun, *hungnaq* ‘probably’ and *řukřau* ‘should’. Uummarmiutun is an Inuktit dialect spoken in the Western Arctic. The analyses are founded on knowledge shared by native speakers of Uummarmiutun. Their statements and elaborations are quoted throughout the paper to show how they have explained the meaning nuances of modal expressions in their language. The paper also includes a comparison with cognates in Utkuhikšalingmiutut, which belongs to the eastern part of the Western Canadian dialect group (Dorais, 2010). Using categories from Cognitive Functional Linguistics (Boye, 2005, 2012), the paper shows which meanings are covered by *hungnaq* and *řukřau*. This allows us to discover subtle differences between the meanings of Uummarmiutun *hungnaq* and *řukřau* and their Utkuhikšalingmiutut cognates respectively.

## 1 Introduction

Modal meaning is highly abstract and context dependent. Among other things, modal expressions are used to talk about how likely it is that something is the case, as well as obligations:

- (1) a. Hialugungnaqtuq  
hialuk-hungnaq-tuq  
rain-*hungnaq*-IND.3.SG<sup>2</sup>  
i. ‘It must be raining’  
ii. ‘It might be raining’
- b. Ann must be in court.  
i. ‘It is highly likely that Ann is in court’  
ii. ‘Ann is obliged to be in court’ (Groefsema, 1995: 53)

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\* The knowledge about Uummarmiutun presented in this paper belongs to Panigavluk, Mangilaluk and the late Kavakřuk. Thanks also to the TWPL editors and two anonymous reviewers who have contributed to the quality of this paper. Any errors or misinterpretations are my own.

<sup>2</sup> *Abbreviations*: 1, first person; 3, third person; CAUS, causative; DECL, declarative; FUT, future; IND, indicative; NEG, negation; OBJ, object; PART, participial mood; PAST, past; PERF, perfect; SG, singular; SUBJ, subject; YSTR, yesterday past.

(1a) shows that Uummarmiutun *Hialugungnaqtuq* ‘it rain-*hungnaq*’ can be used to express two different epistemic modal *forces*: partial force on the (i)-interpretation, where the speaker is fairly but not completely certain, and neutral force on the (ii)-interpretation, where the speaker is less certain. While the force varies, both readings nevertheless have to do with the expression of how likely it is that it is raining, that is epistemic modality. (1b), on the other hand, shows that English *Ann must be in court* can be used to express two different modal *types*: epistemic modality on reading (i), and root modality on reading (ii). Like many modals in Indo-European languages, English *must* is hence a case of lexical root-epistemic overlap (see Van der Auwera & Ammann, 2013). Uummarmiutun *hungnaq*, on the other hand, is a varying force modal. The linguistics literature has paid significant attention to questions pertaining to the semantics and pragmatics of modal expressions (e.g. Kratzer, 1981; Öhlschläger, 1989; Eide, 2005). In spite of this, the body of in-depth empirical and theoretical investigations of modality in non-Indo-European languages has just recently begun to grow (e.g. Kehayov & Leesik, 2009; Deal, 2011; Matthewson, 2013). Generalizations about linguistic phenomena should obviously not be based on a single language family, and modality is no exception. It is therefore important to study modal expressions in many different languages. It is moreover of significant importance that the categories used to describe and compare modal expressions are fit to describe not only overlapping modals, but also varying force modals.

The present paper is concerned with the meanings of two modals, *hungnaq*<sup>3</sup> ‘probably’ and *řukřau* ‘should’, in the Inuktit dialect Uummarmiutun. It provides analyses of Uummarmiutun *hungnaq* and *řukřau* based on knowledge shared by Language Specialists Panigavluk, Mangilaluk and the late Kavakluk, and their elaborations, explanations and judgments are quoted throughout the paper. The paper aims at providing a clear and intuitive overview of the meanings covered by the two modals. Moreover, the paper intends to give a small contribution to the understanding of how Inuktit dialects differ on the lexical semantic level by comparing *hungnaq* and *řukřau* with their cognates in Utkuhikřalingmiutut. Such comparison is made possible due to the availability of example sentences and rich descriptions of Utkuhikřalingmiutut *řungnaq* and *řukřau* in Briggs, Johns and Cook’s (2015) postbase dictionary.<sup>4</sup>

Due to the abstract nature of modal meaning, the study and description of modal expressions pose certain challenges. As we saw in (1a-b) above, a single modal item can be used to express several nuances of meaning. Moreover, the comparison of the semantic properties of modal expressions cross-linguistically can be a messy affair; whereas some modals vary in force (cf. (1a)), other modals vary in type (cf. (1b)). The growing literature on modal expressions in non-Indo-European languages tend to perform their analyses within formal semantics. The present paper shows how categories and notions from Cognitive Functional Linguistics (Boye, 2005, 2012) can be useful in the description and comparison of modal expressions cross-linguistically. Doing so will, as we shall see, facilitate easy comparisons of Uummarmiutun *hungnaq* and *řukřau* with their Utkuhikřalingmiutut cognates.

The paper is structured as follows: §2 gives an overview of the linguistic affiliations of Uummarmiutun. *Hungnaq* and *řukřau* are affixes, more precisely postbases. The section therefore focuses on the aspects of Inuktit postbases which are immediately relevant to the study of modal meaning. §3 introduces modal meaning and the notions which are relevant to the exploration of the meanings covered by the modals under investigation. §4 describes the methodological foundation of the data collection, and

<sup>3</sup> This postbase is spelled *huknaq* in the Uummarmiutun dictionary (Lowe, 1984). In accordance with the preferences of the Language Specialists who worked on the project, the spelling *hungnaq* is used here. It is interesting to note that the North Slope Iñupiaq cognate is represented orthographically as *sugnaq* ‘probably is V-ing’ (MacLean, 2014: 654). Uummarmiutun is closely affiliated with North Slope Iñupiaq and both are considered dialects of Alaskan Iñupiatun. It is likely that the pronunciation of Uummarmiutun *hungnaq* was closer to the North Slope Iñupiaq *sugnaq* when Lowe consulted Uummarmiutun speakers in the mid 80’s, and that this motivated the spelling *huknaq*. Nevertheless, the present day pronunciation of Uummarmiutun *hungnaq* is closer to the pronunciation of the Siglitun cognate which is represented orthographically as *yungnaq* ‘to have probably X-ed; must have X-ed’ (Lowe, 2001: 371). Since Siglitun and Uummarmiutun are spoken in the same communities in the Inuvialuit Settlement Region in Canada, it is probable that language contact has caused today’s pronunciation of Uummarmiutun *hungnaq*.

<sup>4</sup> The sound represented orthographically as *ř* in Utkuhikřalingmiutut is usually pronounced as [ɹ] (Briggs et al, 2015: 13). The sound represented orthographically as *ř* in Uummarmiutun is pronounced similarly.

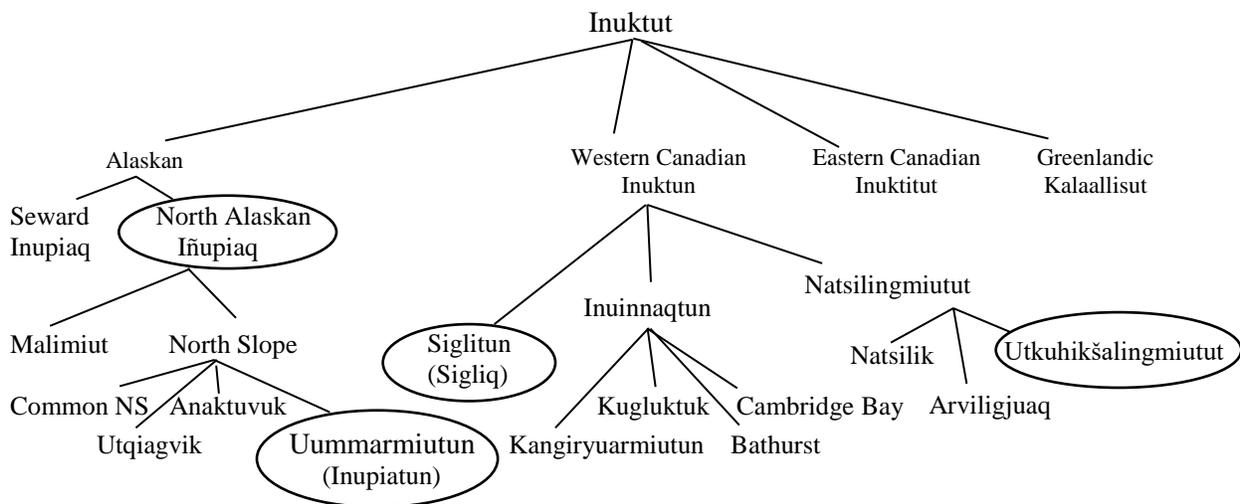
§5 explores the meanings covered by *hungnaq* and *řukřau* respectively. Finally, §6 compares the meaning of *hungnaq* and *řukřau* with Utkuhikřalingmiutut, *jungnaq* and *řukřau*. §7 concludes the paper.

## 2 Uummarmiutun

Uummarmiutun is an Inuktitut dialect spoken in the Inuvialuit Settlement Region in the Northwest Territories in Canada, mainly in Inuvik and Aklavik. In the early 1900s, Inupiat from Alaska migrated to the western parts of the Inuvialuit Settlement Region around the Mackenzie River Delta. They came to be known as Uummarmiut (Arnold et al. 2011). Uummarmiutun is closely related to North Alaskan Iñupiaq, and some people in Inuvik use the name Inupiatun rather than Uummarmiutun. Other Inuktitut dialects in the Inuvialuit Settlement Region are Siglitun and Kangiryuarmitun. As they were working towards their land claims, Uummarmiut, Siglit and Kangiryuarmit 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). After ten years of negotiations, the Inuvialuit and the Government of Canada signed the Inuvialuit Final Agreement in June 1984 (see e.g., Arctic Governance, 2016; Inuvialuit Regional Corporation, 2017a). Inuvialuit are deeply connected to their language (see Panigavluk, 2015; Oehler, 2012), and many people, including the staff at the Inuvialuit Cultural Resource Centre, work hard to increase the knowledge and use of the language. It is nevertheless 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). According to a survey conducted between 2004 and 2007, 694 individuals in the Northwest Territories reported that they were fluent in Inuvialuktun (see Oehler, 2012: 6-7). One hundred ninety-six spoke Kangiryuarmitun, and the remaining 498 speakers were divided between Siglitun and Uummarmiutun.<sup>5</sup>

The Inuktitut dialect continuum spreads across Inuit country from the Little Diomedé Island off the Alaskan coast in the west, across the arctic in Canada to Kalaallit Nunaat (Greenland) in the east. The language is usually divided into four main dialect groups: Alaskan Inupiaq, Western Canadian Inuktitun, Eastern Canadian Inuktitut and Greenlandic Kalaallisut, as illustrated in Figure 1. The figure is based on MacLean (1986a), Nagai (2006), Lowe (1985a), Dorais (2010) and Berthelin (2017):

Figure 1: Affiliations of the Inuktitut dialects mentioned in the paper<sup>6</sup>



<sup>5</sup> The reader is strongly encouraged to consult *Taimani* (Arnold et al. 2011) published by the Inuvialuit Cultural Resource Centre to learn about Inuvialuit history from time immemorial to the present day.

<sup>6</sup> Note that many more Inuktitut dialects exist, and the figure merely shows the immediate affiliations of the dialects mentioned in the paper.

Like Inuktut in general (e.g., Fortescue, 1980, 1983; Johns, 2014), Uummarmiutun is polysynthetic and agglutinative. One of the characteristics of Inuktut is the large inventory of postbases. The structure of the Inuktut word may be modelled as follows:<sup>7</sup>

*Figure 2: The Inuktut word*

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

Nagai (2006: 35)

As indicated in Figure 2, postbases and enclitics are optional. Postbases can be used to add a wide range of different meanings to the interpretation (see Johns, 2014), such as concepts like ‘establish’, ‘envy’ and ‘make’ and abstract notions like modality and negation (see e.g., Fortescue, 1980). When a postbase or an ending is attached, various phonological processes may take place such as assimilation, gemination and deletion (see Dorais, 2010: Chapter 2, for Inuktut in general, and Lowe, 1984; MacLean, 1986, 2014, for Uummarmiutun and North Slope Iñupiaq in particular). The reader will therefore notice that Uummarmiutun *hungnaq* ‘probably’, for example, is realized in accordance with the orthographical representation *gungnaq* when attached to a stem ending in *k*, as in (2b):

- (2) a. Hialuktuq  
hialuk-tuq  
rain-IND.3.SG  
‘It is raining’
- b. Hialugungnaqtuq  
hialuk-hungnaq-tuq  
rain-*hungnaq*-IND.3.SG  
‘It must/might/could be raining’

In Inuktut, a postbase generally scopes over everything to its left (Fortescue, 1980, 1983). That is, when postbases co-occur, the postbase closer to the ending takes scope over the postbases closer to the stem:

- (3) a. Qilalugarniallahihuktuq  
qilalugaq-niaq-lla-hi-huk-tuq  
whale-hunt-able.to-become-want-IND.3.SG  
‘He wants to learn to be a whaler’
- b. Aniniarungnaqtuq  
ani-niaq-hungnaq-fuq  
go.out-FUT-maybe-IND.3.SG  
‘Maybe he is going out’

The order of postbases in the Inuktut verb is generally so that postbases with aspectual meaning precede postbases with temporal meaning which precede postbases with epistemic meaning:

*Figure 3: Scope*

stem + (aspectual affix) + (tense affix) + (epistemic modality) + inflection

(see Fortescue, 1980; Trondhjem, 2009)

<sup>7</sup> This figure fits nominal as well as verbal words. As the paper is concerned with modal postbases in verbal words, nominals will not be discussed any further.

Consider *Aniniarungnaqtuq* in (3b) above in relation to Figure 3; the future expression *niaq* precedes the epistemic modal *hungnaq* ‘probably’. Uummarmiutun speaking consultants would consistently reject words with the opposite order, that is *hungnaq* ‘probably + *niaq* ‘future’, and inform that they were in fact not words. When an Inuktut postbase has more than one meaning, the slot it occupies in the word can be used to disambiguate the postbase (Fortescue, 1980; Trondhjem, 2008, 2009). Simply put: If a postbase has one reading only, it can only occur in the slot assigned to that type of meaning. If a postbase has more than one reading, it can occur in different slots (in accordance with the types of meanings it allows), and the slot will aid the disambiguation. As we shall see later in the paper, restrictions on the relational order of modal postbases in Uummarmiutun and Utkuhikšalingmiutut play a crucial role in determining which meanings they cover. It follows from the rewrite rules in Fortescue (1980: 261) and his description of the slots that Inuktut postbases with root modal meaning occur closer to the stem than postbases with epistemic meaning (see also *ibid.*: 272).

The last note I want to make about Uummarmiutun grammar for now is concerned with tense. Like Alaskan Iñupiaq (MacLean, 1986, 2014), Uummarmiutun marks tense in its verbal inflections. This is illustrated in (4a), where *ruaq* indicates ‘past’.<sup>8</sup> Alaskan Iñupiaq and Uummarmiutun verb endings are sensitive to a distinction between present and past tense (Lowe, 1985). This is different from tense marking in other Inuktut dialects, which mainly use postbases to mark tense, as illustrated in (4b-c) (see e.g., Trondhjem, 2008: 10):

- (4) a. Iñupiaq  
 aniruaq  
 ani-**ruaq**  
 go.out-ind.PAST.3.SG  
 ‘He left’
- b. Inuktitut  
 anilaurtuq  
 ani- **laur**- tuq  
 go.out-YSTR.PAST-PART.3.SG  
 ‘He left yesterday’
- c. West Greenlandic  
 anisimavoq  
 ani-**sima**-voq  
 go.out-PERF-IND.3.SG  
 ‘He has left / He left’ (Trondhjem, 2008: 180)<sup>9</sup>

### 3 Modal meaning

Through the use of modal expressions, speakers describe the necessity or possibility that an action is actualized given the circumstances, as in (5ab), as well as the necessity or possibility that a state of affairs is really the case, as in (5c):

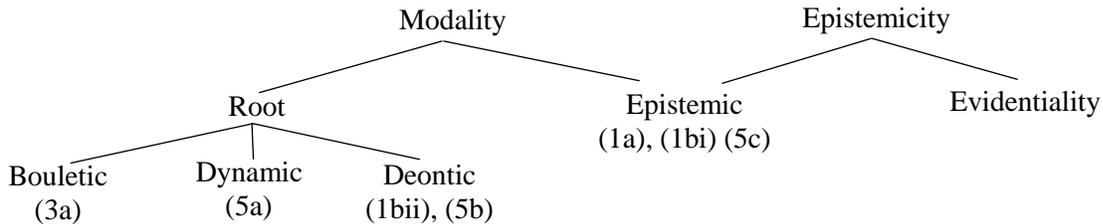
- (5) a. I am so thirsty, I must have water.  
 b. The little girl needs her book, you must return it.  
 c. He dislikes fruit. He may not like apples.

<sup>8</sup> The pronunciation of the sound represented as *r* in North Slope Iñupiaq corresponds to the sound represented as *ř* in Uummarmiutun.

<sup>9</sup> Glosses translated from Danish by me.

The meanings of modal expressions are generally described in relation to two parameters: modal type and modal force. Modal types are divided into root and epistemic modality, and root modality is further subdivided into ‘bouletic’, ‘dynamic’ and ‘deontic’ modality (see e.g., Lyons, 1977; Eide 2005). Following Boye (2012) and Berthelin (*in prep*), evidentiality is not a type of modal meaning, but rather forms a category of epistemicity together with epistemic modality:

Figure 4: Traditional labels for modal types



In (5a) above, *must* expresses dynamic modality, in that it makes a reference to the physical circumstances which push for the actualization of ‘I have water’. In (5b), *must* expresses deontic modality in that it relates the actualization of ‘you return the book’ to a set of norms or social circumstances. Bouletic modality relates the actualization to desires (see Boye, 2005). Examples of bouletic modality is the meaning expressed by *huk* in (3a)<sup>10</sup> above and English *want*. *May* in (5c) expresses epistemic modality, in that it makes a reference to a pool of knowledge which is compatible with the verification of ‘he not like apples’. Some authors (Palmer, 2001) include evidentiality in the category of epistemic modality, and some (Matthewson et al. 2007; Matthewson, 2010; Von Stechow & Gillies, 2010) argue that the two categories conflate. Evidentiality as well as epistemic modality is indeed an epistemic notion (Boye, 2012), and some linguistic expressions encode epistemic modality as well as evidential meaning. The two categories are nevertheless better kept apart (at least on the descriptive level), because some linguistic expressions encode epistemic modality without restricting the evidential parameter and vice versa (Boye, 2012; see also Nuyts, 2001a; Boye, 2005; Nuckolls & Michael, 2012).

Note that the English modals *must* and *may* are both used to express root as well as epistemic modal meanings. Consider (6):

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

Out of context (6a) has at least two meanings; one where Ann is obliged to be in court (deontic), and one where it is highly likely that Ann is in court (epistemic). Also (6b) has at least two meanings; one where Mary is permitted to leave tomorrow (deontic), and one where it is possible that Mary will leave tomorrow (epistemic). *Must* and *may* are thus cases of root-epistemic overlap, because their lexically encoded (i.e. semantic) meanings cover root as well as epistemic meanings. The disambiguation takes place on the pragmatic level, in other words, the hearer determines the intended meaning in accordance with contextual cues (see Groefsema, 1995). Note however, that all meanings of *may* are weaker than all meanings of *must*: In cases like in (6b), the actualization of ‘Mary leave’ is *possible* given what is permitted, or it is *possibly* true that Mary leaves tomorrow. As for *must* in (6a), it is necessary for Ann to be in court, or it is highly likely that she is in court. This means that *may* and *must* are lexically restricted to a certain modal force. Indo-European modals in general (Van der Auwera & Ammann, 2013) tend to restrict the force parameter lexically to one of the forces traditionally described as possibility or necessity, while the context determines

<sup>10</sup> Uummarmiutun *huk* expresses bouletic modality in (3a), but it is not lexically restricted to bouletic modal meaning only – it rather has the more general root modal meaning where the force is located internal to the subject referent. (*Huk* does not cover epistemic meanings.) See Berthelin (2017) for a full account and Johns (1999) for accounts of postbases in other Inuktit dialects with meanings similar to Uummarmiutun *huk*.

the modal type (root or epistemic) as illustrated in (6). Also West Greenlandic (Fortescue, 1984), Tuvan (Anderson & Harrison, 1999), Mandarin (Li & Thompson, 1981) and Egyptian Arabic (Gary & Gamal-Eldin, 1982; Mitchell & Al-Hassan, 1994) display root-epistemic overlap. Root-epistemic overlap is by no means a universal phenomenon. Several languages of the world have non-overlapping modal expressions. That is, modals which lexically restrict a specific modal type. Non-overlapping modals are especially common in languages in Papua New Guinea and in the Americas (see Van der Auwera & Ammann’s (2013) WALS map for Feature 76A), including Uummarmiutun.

In the formal semantics literature (e.g., Kratzer, 1981, 2012; Von Stechow, 2006; Peterson, 2010), modal force is conceived of as a distinction between possibility and necessity, or in terms of existential or universal quantification over possible worlds. To facilitate descriptive clarity and easy comparison of the modals in focus of the present study I shall approach modal force through the notion of unrealized force-dynamic potential (Sweetser, 1984, 1990; Talmy, 1988; Boye, 2005). This conception of modality defines modal meaning as a source which produces a force moving an antagonist towards a goal. In (5b), for instance, a set of norms produce partial force which moves the event ‘you return the book’ towards (but not all the way to!) actualization. And in (5c) the pool of knowledge produces a neutral force towards the verification of the proposition ‘he not like apples’ (see also Boye, 2005, 2012; Berthelin, 2017). The force distinctions relevant to the modals under discussion here are partial, neutral and less than full.

Table 1: Force

Non-modal force	Modal forces	
Full	Partial English <i>must</i>	Neutral English <i>may</i>
Full	Less than full	

(adapted from Boye, 2012: 22; see also Berthelin, 2017)

As can be read from Table 1, a full force is not a modal force (see Boye, 2005; Berthelin, 2017: Chapter 3, for details). This is in line with the definition of modality as *unrealized* force-dynamic potential which appropriately excludes full certainty and causative meanings from the semantic space of modality. An expression may of course encode a meaning which covers for instance full certainty and partial epistemic force (see Boye, 2012). Such expressions simply cover a modal meaning as well as a neighboring non-modal meaning, and their force restriction can be labelled ‘more than neutral force’ (see Boye, 2012). In addition to its clear distinction between modal and non-modal meanings, a benefit of the force distinctions illustrated in Table 1 is that it is easily applicable in the analyses of varying force modals, which are found in several languages of the world, including Uummarmiutun.<sup>11</sup>

#### 4 Methodology

The methods used to collect knowledge about *hungnaq* and *řukřau* is based in Matthewson’s (2004) semantic fieldwork methods (see also Bohnemeyer, 2015; Bochnak & Matthewson, 2015). The premise is that knowing the meaning of an expression is to know under which conditions an utterance with that expression can and cannot be used. During our meetings, the language consultants working on the project were asked in various ways to share knowledge about which scenarios match utterances with *hungnaq* and *řukřau*. Modal meaning is highly abstract and context dependent. The discussion of sentences in relation to contexts therefore helps the researcher perform a systematic investigation, and it facilitates consultants in

<sup>11</sup> See Deal (2011) and Peterson (2010) for ways to handle varying force modals in Nez Perce and Gitksan within formal semantic models.

explaining and elaborating on the subtle meaning nuances of the modal expressions in their language. During our meetings, I would ask the consultant to explain the meaning of a sentence to me by describing a scenario where it can be uttered. Another question frame was to present a sentence plus a scenario and ask if the sentence could be uttered in that scenario. This frame is especially suitable for obtaining negative data, and thereby to understand which meanings are *not* covered by the expression under investigation (see Mathewson, 2004). Another fruitful and fun way to talk about linguistic meaning is through minimal pairs. That is, I would ask the consultant to compare two sentences; for instance one with *řukřau* and one with a different postbase with presumed similar meaning. This type of question inspired elaborate scenarios and the sharing of subtle details concerning the meaning and use of the expressions figuring in the minimal pair (see Mathewson, 2004; Berthelin, 2017, for details on this methodology).

The data presented throughout the paper has the shape of quotes from the interview sessions. This way of rendering data increases transparency, and it serves to show exactly how the consultants have chosen to render the explanations and knowledge about *hungnaq* and *řukřau*. It is Panigavluk, Mangilaluk and Kavakluk who have shared the knowledge. Following our agreement, the person who gave the individual datum is anonymized. J, L and N refer to the consultants, and S refers to the interviewer. Feminine and masculine pronouns are used randomly.

## 5 The Uummarmiutun modal postbases *hungnaq* and *řukřau*<sup>12</sup>

### 5.1 *hungnaq*

Let us start with modal type. In the Uummarmiutun dictionary (Lowe 1984: 105), the meaning of *hungnaq* is glossed as ‘probably’. This indicates that *hungnaq* can be used to express epistemic modal meaning.

- (7) Aullaruknaqtuq  
 aullaq-huknaq-tuq  
 leave-*hungnaq*-IND.3.SG  
 ‘He probably left’ (Lowe, 1984: 105)<sup>13</sup>

Consultants never translate Uummarmiutun sentences with *hungnaq* into English sentences conveying root meaning. Moreover, when asked about the meaning of a sentence with *hungnaq*, consultants always explain it with epistemic notions such as ‘not too sure’, as for instance in (8):

- (8) 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:

<i>Hialugungnaqtuq</i>	<i>Hialuktuq</i>
hialuk- <i>hungnaq</i> -tuq	hialuk-tuq
rain- <i>hungnaq</i> -IND.3.SG	rain-IND.3.SG
‘It must/might/could be raining’	‘It is raining’

<sup>12</sup> The data in the present section are all from Berthelin (2017). The analyses, however, are more specifically aimed at fulfilling the purpose of the present paper, i.e. the purpose of providing a clear overview of the meanings covered by *hungnaq* and *řukřau* and in turn compare the findings with Utkuhikřalingmiutut cognates. For more data on *hungnaq* and *řukřau* and fully-fledged semantic and pragmatic accounts, the reader is referred to Berthelin (ibid.).

<sup>13</sup> The sentences and translations are from Lowe (1984). The segmentation and glossing are my own responsibility.

*Hungnaq* is not merely strongly associated with epistemic meaning – *hungnaq* is actually restricted to epistemic meaning. In (9) below, for instance, the consultants do not approve of *Anihungnaqtunga* ‘I go out-*hungnaq*’ as a vehicle for conveying the speaker’s need to leave:

- (9) 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! [giggles] You’re saying ‘Maybe I’m outside, I don’t know’  
 J&S: [laughter]

Sentences under discussion:

<i>Anihungnaqtunga</i>	<i>Aniaqhifunga</i>
ani-hungnaq-tunga	ani-aqhi-funga
leave/go.outside- <i>hungnaq</i> -IND.1.SG	leave/go.outside-be.about.to-IND.1.SG
#‘Maybe I’m outside’	‘I’m about to leave’

In addition to such judgments, the combinatorial restrictions on *hungnaq* show that this postbase is restricted to epistemic meaning only. Recall from §2 that Inuktit postbases are restricted to certain slots in the word depending on the type of meaning they express, and that the order of postbases within the word can be used to disambiguate postbases which cover more than one type of meaning (Fortescue, 1980; Trondhjem, 2008, 2009). Epistemic affixes belong in the slot closer to the verb ending than expressions of root modal meaning (see Fortescue, 1980: 261, 272). Data (10–11) below show that when *hungnaq* co-occurs with negation, *hungnaq* requires the slot closer to the ending, whereas the opposite order is appropriate for the root modal postbase *řukřau* ‘should’ in combination with negation (see §5.2 below on *řukřau*). In other words, *hungnaq* scopes over negation, as reflected by the permitted postbase order, whereas negation scopes over *řukřau*:

- (10) 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-*hungnaq*-NEG-IND.3.SG
- (11) a. Accepted: *řukřau* + *nngit*  
*Utiqřukřaunngitchuq*  
 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*  
 \* *Utinngitřukřaufuq*  
 utiq-nngit-řukřau-řuq  
 come.back-NEG-*řukřau*-IND.3.SG

If *hungnaq* could be used to express root meanings, we would expect the order *hungnaq* + *nngit* to be acceptable. This is however not the case, as seen in data like (10b). Also the permitted order of *řukřau* and *hungnaq* indicates that *hungnaq* covers epistemic meaning only (Berthelin, 2017):

- (12) a. Rejected: *hungnaq* + *řukřau*  
 \* Anihungnaqtukřaufuq  
 ani-hungnaq-řukřau-fuq  
 leave-*hungnaq*-*řukřau*-IND.3.SG
- b. Accepted: *řukřau* + *hungnaq*  
 Havaktukřauhungnaqtuq  
 havak-řukřau-hungnaq-fuq  
 work -*řukřau*-*maybe*-IND.3.SG  
 (you fixed something and) ‘maybe it’s gonna work’

Data like (12) show that *hungnaq* has to occur closer to the ending than *řukřau* – the opposite order is not acceptable. The same restrictions apply on the relational order of *hungnaq* in combination with the root modal *yumiřaq* ‘may, can’:

- (13) a. Accepted: *yumiřaq* + *hungnaq*  
 Aniyumiřarungnaqtuq  
 ani-yumiřaq-hungnaq-tuq  
 leave-may/can-*hungnaq*-IND.3.SG  
 ‘Maybe he could go out’
- b. Rejected: *hungnaq* + *yumiřaq*  
 \* Tunihungnarumiřaraa  
 tuni-hungnaq-yumiřaq-raa  
 sell-*hungnaq*-may/can-IND.3.SG.SUBJ.3.SG.OBJ

On the modal type parameter, *hungnaq* is thus more restrictive than for instance English *must* and *may*, in that *hungnaq* is restricted to epistemic modal meaning while *must* and *may* both covers root as well as epistemic meanings. On the modal force parameter, however, *hungnaq* is broader than expressions like *must* and *may*: *hungnaq* covers neutral *as well as* partial force. In (8) above, the consultant translates the sentence with *hungnaq*, *hialugungnaqtuq*, into ‘it might be raining’ and ‘it could be raining’ which express neutral force, and ‘it must be raining’ which expresses partial force. Also (14) and (15) below show that the meaning of *hungnaq* covers neutral as well as partial force. In (14), the consultant is asked how to convey a communication intention rendered in English as ‘Well, maybe she left, maybe she’s still here. I don’t know’. The speaker in the scenario cannot find Sussie, and this leads her to the assumption that the chances that she has left equal the chances that she is still there, that is, she does not know. The consultant chooses *hungnaq* to convey this epistemic uncertainty:

- (14) S: Let’s say you’re at a party with some friends, and you’re, you’re looking for Sussie, and you can’t find her, so you say ‘Well, maybe she left, maybe she’s still here. I don’t know’.  
 J: Sussie aullarungnaqtuq. Or .. Anihungnaqtuq. Yeah, Sussie anihungnaqtuq.<sup>14</sup>

<sup>14</sup> The consultant does not translate the whole sentence in the scenario. This is probably because she finds that *Sussie anihungnaqtuq* is sufficient to convey the communication intention in the stimulus.

Sentences under discussion:

Sussie aullar <u>hungnaq</u> tuq	Sussie anih <u>hungnaq</u> tuq
Sussie aullaq-hungnaq-tuq	Sussie ani-hungnaq- <u>fuq</u>
[NAME] leave- <i>hungnaq</i> -IND.3.SG	[NAME] leave/go.outside- <i>hungnaq</i> -IND.3.SG
‘Maybe Sussie left’	‘Maybe Sussie left’

(15) below shows that *hungnaq* can also be used to express partial epistemic force. Here the consultant explains the meaning of a sentence with *hungnaq* through a scenario where it is highly likely that the subject referent has arrived on the given location:

- (15) S: Could they also say Ii, tikitchhungnaqtuq ?  
 L: They could say it like that, ‘He must have reached’. Nobody called us or nobody radioed us, Tikitchhungnaqtuq, he must have got there. Otherwise we would have heard other – you know – other uhh .. something different.

Sentence under discussion:

Ii, tikitch <u>hungnaq</u> tuq
ii tikit-hungnaq-tuq
yes arrive- <i>hungnaq</i> -IND.3.SG
‘He must have reached’

*Hungnaq* is hence appropriate when the speaker has a high degree of certainty, but – as (16) below shows – not when the speaker is fully certain. The consultant who gave (16) interprets the scenario such that the evidence leads the speaker to *know* that her husband went hunting, and she rejects the use of *Anguniarungnaqtuq* ‘he hunting-*hungnaq*’, which she explains as ‘I think he went hunting’.<sup>15</sup>

- (16) 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’.

Sentence under discussion:

<i>Anguniarungnaqtuq</i>
anguniaq-hungnaq- <u>fuq</u>
hunting- <i>hungnaq</i> - IND.3.SG
‘I think he went hunting’

Since the meaning of *hungnaq* covers neutral force as well as partial force – but not full force – its force restriction is appropriately labelled as ‘less than full force’. Table 2 on the next page shows the semantic force restriction on *hungnaq* in relation to English *must* and *may* respectively:

<sup>15</sup> Note that (16) also shows that indirect evidentiality is not sufficient to license the use of *hungnaq* (Berthelin, 2017).

Table 2: Force

Non-modal force	Modal forces	
Full	Partial English <i>must</i>	Neutral English <i>may</i>
Full	Less than full Uummarmiutun <i>hungnaq</i>	

## 5.2 řukřau

The meaning of řukřau is described as “*must, has to*” in the Uummarmiutun dictionary (Lowe, 1984: 170):

- (17) a. Hiñiktukřaufřuq  
hiñik-řukřau-řuq  
sleep-řukřau-IND.3.SG  
‘He must sleep’
- b. Niriřukřaufřuq  
niri-řukřau-řuq  
eat-řukřau-IND.3.SG  
‘He has to eat’ (Lowe, 1984: 170)<sup>16</sup>

English *must* and *have to* can be used to express epistemic as well as root modal meanings. The question is therefore whether Uummarmiutun řukřau covers both these modal types, or whether it is lexically restricted to either. Before we look at the evidence that řukřau is in fact restricted to root modal meaning – more specifically deontic meaning – at the present stage of Uummarmiutun, let us briefly address the force restrictions on řukřau.

The glosses in the dictionary (Lowe, 1984) suggest that řukřau is not a variable force modal but rather restricted to partial force. This is confirmed by data like (18). Here J discusses the sentence *Peter aullaqtukřaufřuq* ‘Peter leave-řukřau’. She clearly reserves the sentence for the expression of an obligation, which is a partial force notion, rather than a permission, which is a neutral force notion:

- (18) J: You commanding Peter..  
N: .. to leave. He is getting too drunk, so he has to leave! Aullaqtukřaufřuq Peter! Aniřukřaufřuq!  
[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 -tukřaufřuq.

Sentences under discussion:

Aullaqtukřaufřuq Peter! Aniřukřaufřuq!	Aullallařuq
aullaq-řukřau-tuq Peter ani-řukřau-tuq	aullaq-lla-tuq
leave-řukřau-IND.3.SG [name] go.out-řukřau-IND.3.SG	leave-can/may-IND.3.SG
‘Peter must leave! He must get out!’	‘He may leave’

<sup>16</sup> The sentences and translations are from Lowe (1984). The segmentation and glossing are my own.

As for modal type, the data confirm that *řukřau* covers root modal meaning. In (18) above, for instance, the consultants describe the meaning of *Peter aulluqtukřauřuq* ‘Peter leave-*řukřau*’ through a scenario where the actualization of ‘Peter leave’ is related to a set of norms. This is a deontic meaning, and hence a type of root meaning (cf. Figure 4). *Řukřau* can also be used to talk about events in the future, but only if the event is planned or scheduled – and thereby involves a social contract (see Brandt, 1999; Boye, 2001) – or if it is desired by somebody as in (19):

(19) Scenario: Simon knows a lot about whaling, and there’s a big whaling meeting tomorrow. Is one of these – if any – sentences appropriate: Simon uqakihifūq or Simon uqaqtukřauřuq

L: Okay if uhm .. if we’re gonna choose somebody to talk for us, then Simon uqaqtukřauřuq. He’s the one to speak. And then this Simon uqakihifūq, 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 Uqaqtukřauřuq. He’s gonna speak on our behalf.

Sentences under discussion:

Simon uqakihifūq	Simon uqaqtukřauřuq
Simon uqaq-kihi - tuq	Simon uqaq-řukřau-tuq
[name] speak-FUT-IND.3.SG	[name] speak- <i>řukřau</i> -IND.3.SG
‘Simon is going to speak’	‘Simon is going to/should speak’

*Řukřau* thus covers root modal meanings where the force comes from a source external to the subject referent, such as Peter’s friends in (18) or the people who want Simon to speak in (19). If the source of the force is internal to the subject referent, *řukřau* is not accepted. During interviews, the word *tagiuqtukřauřuq*, ‘he sneeze-*řukřau*’, was rejected as not understandable. During an email correspondence it became clear that the reason for the oddness of *řukřau* in combination with the stem *taguiq-* ‘sneeze’ is that it yields an interpretation where the subject referent is commanded (in this case by herself) to sneeze:

(20) About *tagiuqtukřaufunga*: “You’re commanding yourself to tagiuq sneeze. You’re saying ‘I must sneeze’. You’re telling yourself you have tagiuqhaq.”

Sentence under discussion:

<i>Tagiuqtukřaufunga</i>
<i>tagiuq-řukřau-tunga</i>
<i>sneeze-řukřau</i> -IND.1.SG
‘I have to sneeze (command)’

Note that self-imposed commands such as in (20) are not to be confused with internal location of the source. It is not the speaker’s internal desires or internal physical conditions that force the actualization of the sneezing in (20) – she commands herself to sneeze, that is, she imposes an obligation on herself. After all, it is slightly odd to view it as suitable or appropriate to sneeze, and hence the oddness of *tagiuqtukřauřuq*, ‘he sneeze-*řukřau*’. (20) is therefore compatible with the other data indicating that *řukřau* makes a reference to a source external to the subject referent, more specifically a force from a set of norms, and *řukřau* is thus an expression of deontic (root) modality.

Some of the collected data show that *řukřau* not only covers root meaning but is actually *restricted* to root meaning. If the meaning of *řukřau* had covered epistemic modal meaning, we would expect the sentence *Nakuuřukřauřuq* to yield an interpretation along the lines of ‘she must/might be doing good’. The sentence is rejected, however, because of the oddness in commanding someone to be doing good:

(21) 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:

- \*Nakuufuk̄faufuq  
 naku-u-fuk̄fau-tuq  
 pleasure-be-*fuk̄fau*-IND.3.SG  
 ‘She has to be doing good’

Additional evidence that *fuk̄fau* is lexically restricted to root modal meaning is found in its combinatorial restrictions. Recall data (10–11) above which show that *fuk̄fau* combines with negation in the opposite order from the epistemic modal *hungnaq*. If the lexically encoded meaning of *fuk̄fau* had covered epistemic modality, we would have expected words like (11b) to be acceptable and simply yield an epistemic interpretation.

In spite of all the evidence that *fuk̄fau* is root modal only, it cannot be ignored that in some contexts *fuk̄fau* does yield an epistemic interpretation, more specifically a hearsay evidential interpretation:

- (22) J: Hialuktuk̄faufuq is ... uhh ... You, you’re seeing the .. somebody you heard the news and .. that gonna rain. But, you’re saying .. Hialuktuk̄faufuq 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 Hialuktuk̄faufuq ?<sup>17</sup>  
 J: ... uhhh .. You heard it from me, yeah.

Sentences under discussion:

- |  |                           |
|--|---------------------------|
| Hila hialuktuk̄faufuq                  | Hila hialukkihifuq        |
| hila hialuk-fuk̄fau-tuq                | hila hialuk-kihi-tuq      |
| weather rain- <i>fuk̄fau</i> -IND.3.SG | weather rain-FUT-IND.3.SG |
| ‘It’s gonna rain’ (I heard)            | ‘It’s gonna rain’         |

Partial normative force modals which are used to express hearsay evidential meaning are also found in Germanic Indo-European languages. The modal auxiliaries *sollen* ‘should’ and *skulle* ‘should’ in German and Danish are used to express (subject external) obligations as well as hearsay evidentiality (e.g., Öhlschläger, 1989: 233–234; Palmer, 2001: 42; Eide, 2005: 32; Boye, 2012: 156). This lexical polyfunctionality is also found in the Finno-Urgic languages Estonian and Finnish (Kehayov & Leesik, 2009: 374). There is though an important difference between the situation of the Germanic auxiliaries and Ummarmiutun *fuk̄fau*: German *sollen* ‘should’ and Danish *skulle* ‘should’ conventionally encode hearsay evidential meaning in addition to root modal meaning. That is, both meanings are part of the expressions’ lexical semantics. The evidential uses of Ummarmiutun *fuk̄fau*, on the other hand, are best analyzed as context specific interpretations, that is implicatures or pragmatic extensions, rather than part of the semantics. The first argument for this analysis is that not all speakers seem to associate *fuk̄fau* with epistemic interpretations at all. This is evident from (21) above, and (23) below:

- (23) S: I was curious about this sentence here, if I say Hialuktuk̄faufuq uvlupak. Can I say that if I hear on the weather forecast ..  
 N: No.

<sup>17</sup> It should be noted that here I ask whether I myself – who is not a speaker of the language – can use the sentence in question. People tend to be less strict when it comes to correcting the language of outsiders, and hence it could be that the consultant would in fact not accept the sentence if uttered by a native speaker of the language. Note also that she hesitates before confirming that I could say the sentence in the given context. On the other hand, it is important to keep in mind that the Elders working on the project – and especially J – were very willing to let me know when a sentence was wrong, even when I asked whether I myself could say the sentence. See for instance (9) and (16).

S: No?

N: No. You're, you're making it rain, you. You're the boss of the rain. Hialuktukfaufuq. .. uh .. now it's up to you if you want it to rain .. or not.

Sentence under discussion:

Hialuktukfau <u>fuq</u>	uvlupak
hialuk- fukfau-tuq	uvlupak
rain-fukfau-IND.3.SG	today

\* 'It's gonna rain (heard on the weather forecast)'

On another occasion, N rejected *Hialuktukfaufuq* altogether and said: "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!". If hearsay evidential meaning had been part of the lexically (i.e. conventionally) encoded meaning of *fukfau*, such interpretations would arguably be available to all speakers. The other argument that it is not appropriate to analyze evidential meaning as part of *fukfau*'s semantics is data like (11) above. Those data indicate that the lexical knowledge about *fukfau* restricts this postbase from occurring in the epistemic slot. The occasional evidential meaning of *fukfau* is thus not encoded. The remainder of the section gives a brief account of why some people accept evidential interpretations of *fukfau* while others do not.

Word meaning is flexible, and under the right contextual circumstances, a word which conventionally encodes for instance 'saint' can be used to express a meaning more similar to 'a very kind person' (see Wilson & Carston, 2007):

(24) My teacher is a saint.

Because humans are geared towards determining what speakers intend to communicate to us, we look to contextual cues to establish, for instance, how the speaker of (24) intends us to interpret her description of her teacher (see Sperber & Wilson, 1986/1995). Even if we have never heard the word *saint* being used to describe regular people, we may still be capable of extending the meaning of *saint* from 'a person with a certain religious status' to 'a very kind person' (ibid.; Falkum, 2011, 2015). That is, we are likely to infer what the speaker had in mind by activating knowledge about saints and hypotheses about what they could have in common with the speaker's teacher (Sperber & Wilson, 1986/1995). Some people of a speech community may have automatized this pragmatic route of inference and very quickly access the metaphorical or metonymical interpretation of *saint* (see Falkum, 2015). Later on, the 'very kind person'-interpretation of *saint* may become conventionalized to the extent that it is appropriately analyzed as part of the lexical meaning of *saint* on a par with the 'person with a certain religious status'-meaning (ibid.). Let us return to Uummarmiutun *fukfau* with this in mind. The hypothesis is that the encoded root meaning of *fukfau* 'external source imposes partial force towards actualization of the event' in some contexts is extended into the evidential meaning 'external source justifies the verification of the proposition' (e.g., speaker heard from an Elder that it is going to rain (ref. (22))). Both meanings include the notion of an external source, namely norms or other peoples' statements. This nevertheless does not mean that all speakers of a speech community find the same pragmatic routes to be easily available, if the extended meaning is novel or not very much in use. It may be that the pragmatic route used to infer the evidential meaning becomes routinized and then later on the evidential interpretations are so easily available that they become part of the meaning conventionally associated with *fukfau*. At the present stage of Uummarmiutun, however, the evidential uses of *fukfau* are not appropriately analyzed as part of the lexical semantic meaning since a) these interpretations are not accepted by all speakers (ref. (23)), and b) the lexical knowledge about *fukfau* renders words with *fukfau* in the epistemic slot odd (ref. (11–12)). The occasionally available hearsay evidential interpretations of utterances with *fukfau* are rather results from pragmatic inference.







Table 5: Meanings covered by Uummarmiutun *hungnaq* and *řukřau*, and Utkuhikřalingmiutut *jungnaq* and *řukřsau*

	Root		Epistemic	
Neutral	Utkuhikřalingmiutut <i>jungnaq</i>		Uummarmiutun <i>hungnaq</i>	Utkuhikřalingmiutut <i>jungnaq</i>
Partial	Uummarmiutun <i>řukřau</i>	Utkuhikřalingmiutut <i>řukřsau</i>	Uummarmiutun <i>hungnaq</i>	Utkuhikřalingmiutut <i>řukřsau</i>

As can be read from the table: *jungnaq* and *hungnaq* both cover the neutral epistemic force. Uummarmiutun *hungnaq* moreover covers partial epistemic force, whereas Utkuhikřalingmiutut *jungnaq* covers neutral root force. Uummarmiutun *řukřau* is lexically restricted to partial root force. The meaning of Utkuhikřalingmiutut *řukřsau* also covers partial epistemic force in addition to partial root force.

## 7 Conclusions

Languages differ in terms of whether and to what extent their inventory of modals display root-epistemic overlap. Based on knowledge shared by Panigavluk, Mangilaluk and Kavavluk, the paper has shown that the Uummarmiutun modals *hungnaq* and *řukřau* do not display lexical root-epistemic overlap. Unlike many Indo-European modals, Uummarmiutun modals restrict modal type lexically; *hungnaq* is for epistemic modality only, and *řukřau* is for root modal meaning, more specifically deontic modality. *Řukřau* could be on a path to conventionalize the hearsay evidential interpretations which are sometimes available for an utterance with *řukřau*. These cases are, however, better analyzed as results of pragmatic extension of the lexically encoded root meaning. The paper has also demonstrated that *hungnaq* covers more than one modal force, namely neutral and partial force. These forces are traditionally understood as ‘possibility’ and ‘necessity’. With the force taxonomy from Boye (2012), *hungnaq*’s force restriction is appropriately described as ‘less than full’ force. This force taxonomy thereby offers a precise force notion to include in a semantic proposal for *hungnaq* (see Berthelin, 2017, for a full semantic and pragmatic account).

With an overview of the meanings covered by *hungnaq* and *řukřau* in hand plus Briggs et al.’s (2015) Utkuhikřalingmiutut postbase dictionary, the paper has shed light on subtle differences between Uummarmiutun *hungnaq* and *řukřau* and Utkuhikřalingmiutut *jungnaq* and *řukřsau*. As shown in Table 5, *hungnaq* and *jungnaq* are similar in that they both cover neutral epistemic force meaning. They differ, however, in that *hungnaq* also covers *partial* epistemic force, while *jungnaq* also covers neutral *root* force. In other words, Utkuhikřalingmiutut *jungnaq* displays root-epistemic overlap, while Uummarmiutun *hungnaq* is an epistemic variable force modal. Uummarmiutun *řukřau* and Utkuhikřalingmiutut *řukřsau* both cover partial root force, and *řukřsau* moreover covers partial *epistemic* force. Again, Utkuhikřalingmiutut displays root-epistemic overlap on the lexical level, whereas Uummarmiutun does not.

The comparison also revealed interesting differences in syntactic restrictions on *hungnaq* and *jungnaq*. Because Uummarmiutun *hungnaq* is lexically restricted to epistemic meaning, it is also syntactically restricted to the slot for epistemic meaning in the verbal word, and it can only scope over negation. Utkuhikřalingmiutut *jungnaq*, on the other hand, is not lexically restricted to a certain modal type, and hence it may occur in different slots. The slot in which *jungnaq* occurs provides information on how to interpret the postbase (see Briggs et al. 2015), that is as either root or epistemic modality.

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