Semantic elicitation — A discussion of elicitation frames and their application*

Signe Rix Berthelin
Norwegian University of Science and Technology

Abstract: Most semantic fieldwork studies seem to make use of elicitation in the sense of Matthewson (2004) at some point in the data collection process. It is therefore necessary to discuss and develop this technique in addition to innovative techniques such as storyboards and video. The present paper discusses the application of nine different types of elicitation questions which I shall call elicitation frames. With explicit examples from my own fieldwork on information structure and modality in the Inuktut dialects North Slope Iñupiaq and Uummarmiutun, the paper shows what the employment of each individual frame may look like in actual interview sessions, and it discusses how the frames may elicit data that can shed light on different hypotheses from different angles. The applications of the respective frames are also discussed in relation to individual consultants' preferences. The paper thereby offers explicit and critical examinations of the relation between hypothesis, elicitation question, and data point, a relation that lies at the core of the craft of elicitation. For this reason, the paper may be of interest to a novice fieldworker, as well as an experienced fieldworker who wishes to explore, develop, and reflect upon their elicitation practice. The paper also contains novel ideas on how to present data and findings. As fieldworkers, we generally want to present the collected data and make it useful to the scientific community and to the language community. The paper therefore includes two brief sections that show how this can be done. One discusses the use of quotes in journal publications as a way to increase transparency and show how the language consultants have phrased their explanations of the subtle meaning nuances in the language that belongs to them. The other shows novel ways of converting elicitation data into teaching materials.

Keywords: elicitation techniques, Inuktut, modality, data in publications, teaching materials

1 Introduction

Facts about the meaning of a linguistic expression are not directly observable (Bohnemeyer 2015:13–14). This poses a challenge to semantic fieldwork, which is slightly different from, e.g., syntactic or phonetic fieldwork, especially when researching abstract meanings, such as modal expressions and discourse markers (e.g., Matthewson 2004; Bochnak and Matthewson 2015:2; Deal 2015:157). In the last decade, scholars have presented and discussed a range of methods, each with their advantages. Matthewson's (2004) paper discusses elicitation in the traditional sense, where a fieldworker poses a series of questions to a language consultant. She argues that valid semantic fieldwork data can be collected through systematic elicitation if utterances are discussed in relation to contexts where they can and cannot be appropriately uttered. Her paper presents elicitation techniques and explains their theoretical foundation on truth-conditional semantics (see also Bohnemeyer 2015).

* The knowledge on North Slope Iñupiaq in this paper and the studies cited are shared by Lollie Hobson, Tuuqłak Diaz, Dr. Edna Ahgeak MacLean, Janie Snyder, Ronald Aniqsuaq Brower, Doris Hugo, Etta P. Fournier, Lucy Ahvaiyak Brower-Richards, Uumiñaq, Beverly Faye Aqaŋŋiq Hugo, Dick Weyiouanna, Fannie Akpik and two anonymous reviewers. The knowledge on Uummarmiutun is shared by Panigavluk, Mangilaluk, and the late Kavakłuk. *Quyanaqpak* for teaching me about your language! Also thanks to Tyler Roy Gösta Peterson for introducing me to semantic fieldwork at the 3L International Summer School on Language Documentation and Description, Leiden University Centre for Linguistics, July, 2010. And not least, thanks to Lisa Matthewson and two anonymous reviewers for their generous and useful feedback, and thanks to Mifield Xu for the amazingly thorough copy-editing.

In *Semantic Fieldwork Methods*,
Article 3, 2020.

In recent years, a range of innovative methods and tools for semantic research on abstract expressions have emerged, such as storyboards (TFS Working Group 2020; Burton and Matthewson 2015), questionnaires (e.g., Vander Klok 2012; see also Max Planck Institute for Evolutionary Anthropology n.d.), and video stimuli (e.g., Lovick and Tuttle 2019). Most semantic fieldwork studies, however, appear to make use of elicitation in the traditional sense at some point in the data collection process — e.g., to check hypotheses derived from storyboard data and to obtain negative data. It is therefore necessary that we discuss and develop this element of the semantic fieldworker's toolbox in addition to the innovative methods. Vander Klok (2019:16–18) discusses how to design contexts that are valid for testing specific meanings, and Peterson (2018) provides concrete explications of research design and workflow. To develop and critically examine our practices as semantic fieldworkers, we also need concrete and explicit discussions about the choosing of the elicitation question in relation to the research question, stage of the study, and the individual consultant. This paper contributes to the ongoing discussion and development of elicitation questions (Matthewson 2004; Bohnemeyer 2015) and shows what their application may look like in actual field-linguistic interviews.

The different kinds of elicitation questions are organized into what I shall call 'elicitation frames'. An elicitation frame consists of a stimulus, a task, and a (wanted) target response, just like Bohnemeyer's (2015) elicitation types. I operate with the level and label 'frame' in the present paper because different types of elicitation questions with different advantages and disadvantages may fall under the same elicitation type in Bohnemeyer's (2015) taxonomy. It is therefore useful to distinguish different question types within some of Bohnemeyer's (2015) types and to label them in order to discuss their application and potentials. The term 'frame' is intended to reflect that the researcher can use them as a basis or template when forming their own concrete interview guide.

The paper reflects systematically on the research questions and hypotheses that the individual elicitation frames can be used to collect data for, and what to consider when the fieldworker employs them in collaboration with language consultants. The discussion of each frame is accompanied by excerpts from interview sessions from my own fieldwork with speakers of two Inuktut dialects, North Slope Iñupiaq (Berthelin 2012) and Uummarmiutun (Berthelin 2017a). This use of direct quotes from the interview sessions illustrates the application of the respective elicitation frames and increases transparency. The quotes show the basis from which the researcher extracts facts about linguistic meaning, and the paper shows how such facts can be extracted from rather lengthy and complex data points. The overall goals of the paper are to contribute to the development and refinement of valid elicitation strategies, and to spark critical reflections and conversations about the choice and implementation of elicitation question throughout the data collection process.

The paper is organized as follows: it begins with a brief introduction to Inuktut with an emphasis on the aspects of the language that are necessary for understanding the data under discussion. Section 3 discusses the notion and purpose of elicitation in semantic fieldwork. Section 4 presents, discusses and compares the respective elicitation frames, their advantages, disadvantages and application. We shall discuss the use of translation tasks (4.1), how judgments of combinations and scope can shed light on semantics (4.2), the pairing of sentences and scenarios (4.3), and the use of minimal pairs (4.4). The section ends with an illustration of how the respective frames may be employed in an actual interview session, and how they interact with each other (4.5).

The paper is mainly methodological. However, since the purpose of collecting data on endangered languages is generally linguistic analysis and language revitalization, some consideration of data presentation and giving back to the community is in order. Section 5 therefore briefly discusses

how to present data from elicitation interviews in publications, and Section 6 shows how elicitation data can be used to make teaching materials. Section 7 concludes the paper.

2 Inuktut

The Inuktut dialect continuum[1] spreads across the Inuit lands from Little Diomede Island west of the coast in Alaska, across arctic and sub-arctic Alaska and Canada to Kalaallit Nunaat (Greenland). North Slope Iñupiaq is spoken on the North Slope in Alaska, and Uummarmiutun is spoken in the Inuvialuit Settlement Region in the Canadian Northwest Territories, and they are both sub-groups of the westernmost branch of Inuktut (MacLean 1993; Nagai 2006; Lowe 1985; Dorais 2010). The experience of mutual intelligibility among the Inuktut dialects varies, and dialectal differences are found in grammatical and semantic domains as well as on the phonological level (Dorais 2010). There is, however, 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).[2]

Like the other Inuktut dialects, North Slope Iñupiaq and Uummarmiutun are polysynthetic and agglutinative (e.g., Fortescue 1980, 1983; Johns 2014). One of the characteristics of Inuktut is the large inventory of postbases.[3] Postbases can be used to add a wide range of different meanings to the interpretation of the verbal or nominal stem, such as concepts like 'hunt' (as in (1) below), 'establish', 'envy' and 'make', and abstract notions like modality and negation (e.g., Fortescue 1980). The structure of the Inuktut word may be modelled as follows:

Figure 1: The Inuktut word (Nagai 2006:35)

$$\underbrace{\textbf{base}\ (+\ \text{any number of}\ \textbf{postbases})}_{\textbf{stem}} + \textbf{ending}\ (+\ \text{any number of}\ \textbf{enclitics}^{4})$$

Inuktut nominal endings mark person, number and case, and verb endings mark person, number and mood. Unlike most other Inuktut dialects, Uummarmiutun and North Slope Iñupiaq verb endings also mark tense (Lowe 1985; see Trondhjem 2007:10, 180, for a comparison of tense marking in Inuktut dialects). The ending *tuaq*, for instance, is third person singular indicative past, while *tuq* is third person singular indicative. Depending on the meaning of the stem, verbs with *tuq* get either a present tense interpretation, or what Lowe (1985) calls an "immediate past" interpretation. That is, the verb stem *yara-* 'be tired' gets a durative interpretation in combination with *tuq*: *yaraȓuq* 'he is tired', and the verb stem *katak-* 'fall off' gets a punctual immediate past interpretation: *qallutiga kataktuq* 'my cup fell off' (Lowe 1985:112).

[1] The dialect continuum is sometimes called Inuit in the literature. Inuit is, however, also the name of the people. Following 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 (ᐃᓄᐃᑦ ᑕᐱᓕᖅᑕᒥ [Inuit Tapiriit Kanatami] 2020). For an illustrative map of the dialect continuum, see ᐱᑭᓱᓕᕆ [Pirurvik Centre] (n.d.).

[2] Varieties of Inuktut are generally classified as dialects (see, e.g., Dorais 2010:27). However, a systematic study of the possible motivations for this classification is needed.

[3] Postbases are also known as suffixes (Lowe 1985; Trondhjem 2007) and affixes (Fortescue 1980) in the literature. I use the term postbases like, e.g., MacLean (1993), Johns (2014), and Briggs et al. (2015). This makes it easier to distinguish postbases from other suffixes such as inflectional suffixes.

[4] Enclitics will not be discussed any further, as there are no data concerning enclitics in the paper.

As indicated in Figure 1, postbases are optional. When a postbase or inflectional ending is attached, various phonological processes may take place such as assimilation, gemination and deletion (see Dorais 2010: Chapter 2, for Inuktut in general; Lowe 1984 for Uummarmiutun; MacLean 1993, 2014 for North Slope Iñupiaq). In (1) below, for instance, *lla* 'able to, can' deletes the final *q* in *niaq* 'hunt', and the final *q* in *qilalugaq* 'beluga' assimilates into an *r* due to the attachment of *niaq*:[5]

(1) Qilalugarniallahihuktuq.
qilalugaq-niaq-lla -hi -huk -tuq
beluga hunt able.to become want IND.3SG
'He wants to learn to be a whaler.' (Uummarmiutun)

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. In (1) above, the postbase *huk* 'want' scopes over the entire stem to its left; i.e., the postbases *hi* 'become', *lla* 'able to, can', *niaq* 'hunt', and the base *qilaugaq* 'beluga whale'. *Hi* scopes over *lla*, *niaq* and *qilaugaq*, and so on.

3 Elicitation

The basis for semantic and pragmatic analysis is, simply put, a collection of meanings that the expression under investigation can be used to express, plus knowledge of the limits of the expressions' extension. Elicitation is a powerful tool because it allows for direct and systematic testing of hypotheses (Matthewson 2004). 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 their response can reasonably be taken as an indication that E can (or cannot) be used to express M (see Bohnemeyer 2015). This method rests on the theoretical foundation of truth-conditional semantics (see Matthewson 2004 for details).

While elicitation is a familiar activity to most linguistic field researchers, it is worthwhile to clarify what type of interactional activities are covered by the term 'elicitation' in a paper concerned with the application of elicitation in a fieldwork interview. The Oxford Dictionaries define the verb 'elicit' as follows: "*evoke or draw out (a reaction, answer, or fact) from someone*" (Lexico 2020). This definition may yield associations to a mechanical question-response interaction between the fieldworker and the language consultant. However, and especially if the purpose is to collect data for semantic and pragmatic analysis, the field-linguistic interview may well take the form of a conversation about the meaning of sentences and what they can be used to convey. In most of the interviews I have been part of — and I assume the same is true for many a field linguist — I would ask a question, the language consultant would answer and/or elaborate, and then I would ask follow-up questions based on the knowledge the consultant had just shared.

Similarly, Crane and Fleisch (2019) find that their elicitation interviews lead to more interesting results when they go beyond a checklist-style interview. They note that the researcher's goal — at least in the early stage — "[…] is to hold the thread of the elicitation goal and make sure that all of the test frames are elicited, while also allowing for conversational detours, which are likely to provide additional insights" (2019:15). They appear to advocate for a balance between keeping track of the hypotheses that need to be tested on the one hand, and allowing for genuine conversation

[5] The glossing abbreviations throughout the paper follow the Leipzig Glossing Rules.

about meaning on the other. If the latter is neglected, valuable insights into real-life meaning and usage might be lost (Crane and Fleisch 2019:17). The task of the semantic fieldworker who wishes to use elicitation is therefore 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 picture of their potential meaning (see also Berthelin 2012). As will become clear in Section 4, some elicitation frames are better suited for eliciting creative elaborations, whereas others are better suited for more direct testing of hypotheses about an expression's extension. It is important to attend to the different properties of the elicitation frames, because it makes it easier to construct interview guides in relation to the hypotheses, the preferences of the individual consultant, and the stage of the study.

4 Elicitation frames

The most systematic and elaborated categorization of semantic elicitation techniques is found in Bohnemeyer (2015). Bohnemeyer classifies elicitation techniques in terms of stimulus and response types. There are four stimulus types and five response types. This gives us seven — and only seven, Bohnemeyer (2015) argues[6] — possible combinations that are relevant to semantic fieldwork, and thereby seven possible elicitation techniques. Bohnemeyer's categorization is represented in Table 1 below. I have replaced his "contact-language" with the term 'metalanguage'[7] used in the present paper, and numbered the stimulus types for convenience.

The present paper operates with 'elicitation frames'. As stated in the introduction, I found it necessary to draw further distinctions within some of the elicitation types. More specifically, I drew distinctions within some of the four stimulus types, in order to discuss how different versions of the same stimulus type can yield different kinds of data, and thereby serve different purposes in the data collection process. This is not in conflict with Bohnemeyer (2015). He himself describes how a stimulus may contain, e.g., a metalanguage utterance plus a contextual scenario restricting the content of the target language utterance, and thereby be a combination of Type II and Type III (2015:25). This combination (metalanguage sentence + context → target language utterance) is labelled 'Frame B' in the present paper. A label like 'Type II + Type III stimulus' would be less precise, because a Type II-stimulus can also be a target language utterance (rather than a metalanguage utterance), as it appears in the first row in Table 1.

In a similar vein, the frame labelled 'Frame H' in the present paper consists of a stimulus that contains two target language sentences that form a minimal pair, and the task is to explicate their meanings by paraphrase or scenarios. Frame H is therefore an instantiation of Bohnemeyer's (2015) Type VI; i.e., target language utterance → explication by paraphrase or scenario. As we shall see, however, the data we get when the stimulus consists of a minimal pair is different from the data we get with just one target language utterance in the stimulus, as in the original Type VI. This posed the need to name each variant in order to ease the discussion and comparison of their respective

[6] There is, for instance, hardly any point in asking the language consultant to explicate the meaning of a metalanguage utterance or to judge the well-formedness of a description of the content of a linguistic representation.

[7] Like Matthewson (2004) and Vander Klok (2012), I use the term 'metalanguage'. Alternative terms are 'contact language' (e.g., Bohnemeyer 2015) and 'language of wider communication' (e.g., Anderbois and Henderson 2015). I prefer 'metalanguage' because it reflects that the consultants and I have used this language to talk about another language, namely the target language.

Table 1: A classification of elicitation techniques by stimulus and response type (adapted from Bohnemeyer 2015:22)

	Target language utterance	Meta-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
Metalanguage utterance	**Type II** translation	(these combinations go beyond target language elicitation)			
Content of linguistic representation (in the target or metalanguage)	**Type III** Production in a given contextual scenario				
Content of a non-linguistic representation	**Type IV** description				

potentials and limitations.

Another case where the frame units come in handy is when an elicitation question combines properties from several types, not only in terms of stimulus, but also in terms of task. In Frame I, the stimulus is a minimal pair of target sentences[8] plus a contextual scenario,[9] and the target response is an elaboration of their respective suitability in that contextual scenario. The task thereby has a judgment component (Type V), as well as metalinguistic description components (Type VI). The use of the frame units makes it easier to single out a specific type of elicitation question and discuss its application in relation to other types of elicitation questions. The intention is therefore not to break up or challenge the taxonomy in Table 1, or to propose a systematic division into sub-types. The purpose of the frame unit is simply to identify different elicitation question templates that we may use when we construct our interview guides, and to facilitate the discussions of their applications and potentials. The elicitation frames under discussion in the present paper are summarized in Table 2 below.[10]

Ideally, a variety of elicitation frames are employed to ensure the quality and validity of the dataset. Nevertheless, the appropriate choice of elicitation frame depends on various factors. One of these is the type of research question: are you interested in learning how a certain meaning M

[8] Bohnemeyer's (2015) Types I, II, V, VI, and VII all make use of target sentences as part of the stimulus, though not as part of a minimal pair (cf. Table 1).

[9] That is, a Type III-stimulus (cf. Table 1).

[10] As the reader can see, I have made no attempt to cover all Bohnemeyer's (2015) types in any sense, and I leave it to others to discuss the application of variants of Bohnemeyer's (2015) types I, IV and VII.

Table 2: List of elicitation frames discussed

Frame	Stimulus	Target response	Bohnemeyer (2015) types involved
Ai.	Target language sentence	Metalanguage translation	II
Aii.	Metalanguage sentence	Target language translation	
B	Metalanguage sentence + context	Target language translation	II, III
C	Target language sentence containing expressions that are (not) expected to co-occur if a current hypothesis about their meaning properties is true	Judgment	V
D	Target language sentence containing expressions that are (not) expected to co-occur in a specific order given a current hypothesis about their meaning properties	Judgment	V
E	Context + communicative intention	Target language utterance	III
F	Context + target language sentence	Judgment	V
G	Target language sentence	Description of scenario	VI
H	Two target language sentences that form a minimal pair	Elaboration on their difference	VI
I	Two target language sentences that form a minimal pair + a context	Choice / Elaboration on their difference	V, VI

is expressed in the target language? Or in learning which meanings an expression E in the target language can be used to express? It also depends on how much the researcher already knows about the expression under investigation, and it depends not least on the preferences of the individual consultant. Some people have a lot of experience with translation work, and may therefore prefer tasks that involve a sentence and a request for translation.[11] Others may prefer to share their knowledge about their language through descriptions of situations where a given sentence can be appropriately uttered.

In what follows, I present and discuss the different elicitation frames, along with examples of what their use may look like and reflections on when to choose a given elicitation frame. We start out with frames that involve a translation task (4.1). Then we move on to frames that involve a judgment task but no context in the stimulus (4.2). After this, we discuss frames that aim at pairing contextual scenarios with suitable target language sentences (4.3), and finally, there is a section that discusses frames that make use of minimal pairs (4.4). The interviews that the examples are taken from were all conducted with English as a metalanguage. The use of a metalanguage will be discussed when relevant, and I refer the reader to Matthewson (2004:394–395) and Anderbois and Henderson (2015) for general discussions of the use of a metalanguage in semantic fieldwork.

4.1 Translations

The first two frames to be presented involve translation tasks. Frame A is identical to Bohnemeyer's (2015) Type II, and Frame B involves Bohnemeyer's (2015) Types II and III:

Frame A: Translations

	Stimulus	Target response
i.	Target language sentence[12]	Metalanguage translation
ii.	Metalanguage sentence	Target language translation

Frame B: Translations in context

Stimulus	Target response
Metalanguage sentence + Context	Target language translation

Frame Ai is useful when the fieldworker has little or no idea of what the given target language sentence (or an expression within it) means. And Frame Aii is useful when the fieldworker has little or no idea of how a certain meaning is expressed in the target language. However, when the target response is a translation into the target language, the stimulus may well include a context, as in Frame B. This constrains the interpretation of the metalanguage sentence, and thereby the fieldworker has a better idea of which meaning is being translated (Bohnemeyer 2015:27; Matthewson 2004; Cover 2015). The context used in the stimulus may be an imaginary scenario, or it may be inspired by real world scenarios or stories familiar to consultant and fieldworker, as in (2):

[11] See also Nouri-Hosseini (2018:41), who reports that most of the consultants in her study were more comfortable when storyboards included text below the pictures than they were with storyboards without accompanying text.

[12] The target language sentences in the stimuli I used were either *a*) from the Uummarmiutun grammar (Lowe 1985) or dictionary (Lowe 1984), *b*) constructed on the basis of these sources and checked for grammaticality with consultants, or *c*) given by a consultant in a previous interview.

(2) Sentence under discussion:
Hanaiqqaaɬutin, piuɬaaria**lla**hiɬutin.
hanai -qqaa-ɬutin piuɬaaq-iaq **-lla** -hi -ɬutin
get.ready first IND.2SG play go.and **can** FUT IND.2SG
'You get ready first, then you could go out and play.'

Before the interview, the consultant told the interviewer about her grandfather. When the consultant was a kid, her grandfather would always tell her to get all the chores — such as sawing — done first, and then she could go and play.

I:[13] 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?[14]
C: Uh... *hanaiqqaaɬutin*. *Hanaiqqaarutin piuraaria**lla**hiɬutin*. It means, get ready first — get everything ready, and then you could go play.

The metalanguage sentence plus the scenario in the stimulus target a permission meaning — i.e., deontic possibility. The response in (2) contains the postbase *lla* 'be able to, can', and the response thus indicates that *lla* can be used as a vehicle for expressing deontic possibility.

As Bohnemeyer notes, a non-linguistic stimulus *constrains* but hardly *determines* the meaning of the target language response (2015:27). The same point is true for linguistic stimuli and thereby relevant to the application of Frame B (and Frames E, F, and I below): a description of a context is unlikely to be an exhaustive description of a situation. The consultant may hence fill in missing details in her mental representation of the context that turn out to be the factors that license the target language sentence she gives as response.

This pitfall can be mitigated by talking about the context and the response, asking follow-up questions, and listening carefully to further elaborations — in other words, by having a conversation about the scenario and the various utterances that might fit in that scenario (see also Lovick and Tuttle 2019:147–148). A conversation like this, *after* the translation task itself, is different from using a long and detailed description of a scenario as part of the *initial* stimulus. Long verbal stimuli may cause the interviewer and the consultant to lose track of the (relevant) factors in the scenario (Burton and Matthewson 2015:137). Of course, one may also choose to talk over some of the details in the scenario before the translation, especially if the consultant asks for clarification or more detail. The point is that the interviewer and the consultant must share the conception of the scenario, and that any clarification can be ensured before the translation into the target language sentence and/or through a follow-up conversation.

In a slightly different version of Frame Aii and B, the interviewer asks the consultant to translate a dialogue that contains the meaning(s) under investigation into the target language (see, e.g., François 2019). This method is a good alternative when the researcher needs a complex discourse scenario to fix an abstract interpretation — e.g., when eliciting discourse markers. Another way of constraining the interpretation of the metalanguage sentence when asking for translations is a version of Nouri-Hosseini's (2018) Picture-aided Translation Task: the consultant is presented with a picture and a metalanguage sentence. In this way, the picture constrains the interpretation of the metalanguage sentence.[15] Moreover, a verbal description of a scenario is 'gone' and may be forgotten the moment

[13] 'I' stands for 'interviewer'. 'C' stands for 'consultant'.
[14] Some speakers use the name Inupiatun to refer to their language, while others prefer Uummarmiutun.

it is uttered, while a picture offers a more stable shared frame of reference.

When working with translations, it should be kept in mind that not everybody is comfortable translating *into* the target language. Some prefer to translate *from* the target language into the meta-language, or to explain the meaning of target language sentences by means of describing scenarios where the sentence can be used (see Frame G below). Working with the same consultants over a period of time allows the interviewer to become aware of which frames each consultant prefers to work with, and thereby to better prepare for interviews by making interview guides in accordance with individual preferences.

4.2 Judging combinations and scope

Judgment tasks in semantic elicitation may but need not include a context in the stimulus. The acceptance or rejection of certain combinations of lexical items in the target language may provide insights into the meaning properties of the expressions combined (Bohnemeyer 2015). The stimulus in a Frame C question involves a target language sentence, and the target response is a judgment. Frame C thereby falls under Bohnemeyer's (2015) Type V:

Frame C: Judging combinations of expressions

Stimulus	Target response
Target language sentence containing expressions that are (not) expected to co-occur if a current hypothesis about their meaning properties is true	Judgment

Frame C tests the felicity of combining certain lexical elements within the word. We shall now see how this frame may be used to test the hypothesis that Uummarmiutun *yumaaq* is restricted to volitional meaning.

According to the Uummarmiutun dictionary (Lowe 1984), *yumaaq* means 'plan, intend to'. It may therefore be hypothesized that *yumaaq* is restricted to volitional meaning. One of the ways to test the hypothesis is to check if *yumaaq* may be used in combination with a verb stem that expresses an undesirable event, such as *paya-* 'to starve'. People generally do not intend or plan for themselves or others to starve. Therefore, if *paya**yumaaq**tuq* 'he starve-*yumaaq*' is rejected, the hypothesis that *yumaaq* contains a volitional meaning component can be maintained. If *paya-**yumaaq**tuq* is accepted, this would challenge the hypothesis that *yumaaq* is restricted to volition. As it appears in (3), *paya**yumaaq**tuq* is accepted, and given the consultant's explanation, the sentence yields an interpretation free from volition:

(3) Sentence under discussion:
Paya**yumaaq**tuq.
paya **-yumaaq-**tuq
starve *yumaaq* IND.3SG
'He's gonna starve.'

[15] This method was originally developed as a way of maintaining the advantages of the Storyboard method while avoiding the disadvantages experienced by the team members in the *Most and More* project in the employment of the Storyboards method (see Nouri-Hosseini 2018, especially pp. 5–8, for details).

I: *Paya**yumaaq**tuq*...? Is that a word?
[…]
C: *Paya**yumaaq**tuq* — 'he's gonna starve'. *Paya**yumaaq**tuq*... Oh! No. *Paya**yumaaq**tuq*... — because is not good hunter, is sick or... he's gonna starve. *Paya**yumaaq**tuq*. […] You gotta help him. Everybody, anybody in uh... in the Delta when they heard that that guy is gonna starve, they go.

The response in (3) thus indicates that *yumaaq* is not semantically restricted to volitional meaning, but *yumaaq* may still be restricted to a subject-internal modal source; i.e., the modal force comes from within the subject referent. Data point (3) points in this direction because the consultant attributes the actualization of the starving to properties of the subject referent: he is not a good hunter.[16]

The formation of the stimulus in (3) exploits the meaning of another linguistic expression (*paya-* 'starve') to test a hypothesis regarding the meaning of *yumaaq*. In addition, morpho-syntactic restrictions may also be exploited in the formation of stimuli intended to test semantic properties, as in Frame D. Frame D involves the same type of stimulus and target response as Frame C, and it thereby also falls under Bohnemeyer's (2015) Type V. While Frame D looks like an entirely morpho-syntactic judgment task, it may be used to test hypotheses regarding the semantics of the items involved as well. This is because the semantics of the expressions may cause restrictions on their relational order.

Frame D: Judging relational order of expressions

Stimulus	Target response
Target language sentence containing expressions that are (not) expected to co-occur in a specific order given a current hypothesis about their meaning properties plus knowledge of the syntax of the target language	Judgment

Frame D requires some familiarity with the structure of the language as well as the general linguistics literature on the phenomenon under investigation. This is so because the formation of this type of stimulus exploits language-internal and cross-linguistic syntactic properties of linguistic expressions with certain types of meaning. The validity of the test thereby relies on, for example, assumptions about scope in the language *as well as* an assumption about cross-linguistic tendencies. Neither of these are necessarily exceptionless. It is therefore important to triangulate data obtained through Frame D questions with data obtained through other frames before drawing conclusions about the semantics of the expression(s) under investigation.

Let us see how Frame D may be used to investigate the hypothesis that Uummarmiutun *hungnaq* 'probably' is restricted to epistemic modal meaning — i.e., that root modal readings are not available for *hungnaq*. The target responses are judgments of sentences where *hungnaq* occurs in a syntactic environment assumed to be either appropriate or inappropriate given *a*) the suspected meaning of

[16] See a full discussion of data on *yumaaq* in Berthelin (2017a), who concludes that *yumaaq* is restricted to a subject-internal modal source, and in some contexts this gives rise to volitional interpretations.

hungnaq (i.e., epistemic modality), and *b*) observations pertaining to this type of meaning cross-linguistically and in other Inuktut dialects.

We know that cross-linguistically, epistemic modals tend to scope higher than root modals, and these properties may be reflected in differing morpho-syntactic restrictions (Boye 2005, 2013). The same is true for Inuktut (Fortescue 1980). Recall from Section 2 that an Inuktut postbase scopes over everything to its left. The type of meaning encoded by the postbase therefore tends to affect which slot it can occupy in relation to other postbases within the verbal word.[17] According to Fortescue (1980:261, 272), postbases with epistemic meaning belong in the slot closer to the inflectional ending than expressions with root modal meaning. It is therefore relevant to check whether Uummarmiutun *hungnaq* is restricted to the slot closer to the inflectional ending than the suspected root modal *ɬukɬau*. This appears to be the case according to the judgments of (4a,b):

(4) a. Rejected: *hungnaq* + *ɬukɬau*
* Anihungnaqtukɬauɬuq.
ani -hungnaq-ɬukɬau-ɬuq
leave probably ROOT IND.3SG

b. Accepted: *ɬukɬau* + *hungnaq*
Havaktukɬauhungnaqtuq.
havak-ɬukɬau-hungnaq-ɬuq
work ROOT probably IND.3SG
(You fixed something and) 'maybe it's gonna work.'

The data in (4) thus support the hypothesis that *hungnaq* is epistemic only. However, if *ɬukɬau* is an unknown variable like *hungnaq*, the data in (4) are far from solid indications that *hungnaq* is restricted to epistemic meaning. Another scope test that may shed light on the meaning of *ɬukɬau* and *hungnaq* is one where the stimulus involves the negation postbase *nngit*. The premise is as follows: if *hungnaq* allows for epistemic modal readings only, it should be restricted to the slot *after* the postbase *nngit* 'not'; i.e., only *nngit* + *hungnaq* is acceptable. But if *hungnaq* allows for root modal meanings as well, the order *hungnaq* + *nngit* should also be possible, and the relational order would simply serve to disambiguate *hungnaq* between the two readings (see Fortescue 1980; Trondhjem 2007, 2009 for details). The judgments of the sentences in (5) below indicate that when *hungnaq* co-occurs with negation, *hungnaq* is restricted to the slot closer to the inflectional ending:

(5) a. Accepted: *nngit* + *hungnaq*
Aningit**chungnaq**tuq.
ani -nngit-**hungnaq**-tuq
leave NEG **probably** IND.3SG
'Maybe he didn't leave.'[18]

b. Rejected: *hungnaq* + *nngit*
* Ani**hungna**nngitchuq.
ani -**hungnaq**-nngit-tuq
leave **probably** NEG IND.3SG

[17] If a postbase covers more than one type of meaning — e.g., it is ambiguous between two types of meaning — its meaning can be disambiguated by the slot it occupies (see Fortescue 1980; Trondhjem 2007, 2009).

The judgments in (5) support the hypothesis that *hungnaq* is restricted to epistemic modal meanings as it scopes higher than negation. We now need to perform a test on the test itself. This can be done by checking the permitted relational order of negation and the suspected *root* modal postbase *ɾukɾ̂au* 'should'. It turns out that, contrary to *hungnaq*, *ɾukɾ̂au* must precede negation:

(6) a. Accepted: *ɾukɾ̂au* + *nngit*
Utiq**tukɾ̂au**nngitchuq.
utiq **-ɾ̂ukɾ̂au**-nngit-ɾ̂uq
come.back **have.to** NEG IND.3SG
'You don't have to give it back.' *Lit.*: 'It does not have to return.'

b. Rejected: *nngit* + *ɾukɾ̂au*
*Utinngit**tukɾ̂au**ɾ̂uq.
utiq -nngit-**ɾ̂ukɾ̂au**-ɾ̂uq
come.back NEG **have.to** IND.3SG

Frames C and D can thus be used to collect language-internal evidence because they exploit (semantic and syntactic) properties of the language to shed light on hypotheses about the properties of the expressions under investigation. As appealing as this may sound, we need to think critically about the cross-linguistic tendencies that inform the premises of our tests. The data in (4–5) are valid indications about the restrictions on *hungnaq* if and only if root and epistemic modals in Uummarmiutun indeed do adhere to the same morpho-syntactic restrictions as similar expressions in other languages tend to do. A semantics of *hungnaq* which predicts that *hungnaq* is restricted to epistemic modal meaning therefore needs to be based on data obtained through other frames as well.

As for *ɾukɾ̂au*, the application of Frame D in (4) and (6) above may support the hypothesis that *ɾukɾ̂au* is restricted to root-modal readings. However, the application of Frame C below gives a slightly different picture. I asked two consultants about the meaning of *hialuk**tukɾ̂au**ɾ̂uq* 'it rain-*ɾukɾ̂au*'. One consultant rejected the word, saying that no one is the boss of the weather and it is not up to us if we want it to rain. This was expected, due to my hypothesis that *ɾukɾ̂au* is restricted to root modal meaning, and thus the combination with an uncontrollable verb would render the sentence odd. The consultant who gave (7) below, however, accepted the word. And according to her statements, epistemic readings — more specifically hearsay readings — are indeed available for *ɾukɾ̂au*:

(7) Sentences under discussion:
a. Hila hialuk**tukɾ̂au**ɾ̂uq.
hila hialuk-ɾ̂ukɾ̂au-tuq
weather rain *ɾukɾ̂au* IND.3SG
'It's gonna rain.' (I heard.)

[18] *Hungnaq* is glossed as 'probably' throughout the paper because it covers epistemic possibility ('maybe') as well as weak epistemic necessity ('highly likely') (see Section 6). I have nevertheless kept the consultants' translations of the respective sentences, hence the presence of 'maybe' in the translation tier.

b. Hila hialukkihiɾuq.
hila hialuk-kihi-tuq
weather rain FUT IND.3SG
'It's gonna rain.'

C: *Hialuk**tukɾ̂au**ɾ̂uq* is... uh... — You, you're seeing the — somebody you heard the news and — that gonna rain. But, you're saying... *Hialuk**tukɾ̂au**ɾ̂uq* because you heard this, the news. […] But me I could tell you, "*Hialukihiɾuq*", because I've seen the clouds.
I: And then I can tell somebody else *Hialuk**tukɾ̂au**ɾ̂uq*?[19]
C: Uh... You heard it from me, yeah.

The conflict between the data in (4) and (6) on the one hand, and (7) on the other, confirms that morpho-syntactic restrictions should never be taken as sole indicators of the meaning of a linguistic expression. I nevertheless do not believe that scope tests should be completely abandoned. In the case of *ɾ̂ukɾ̂au*, the morpho-syntactic findings in (4) and (6), together with the first consultant's rejection of *hialuk**tukɾ̂au**ɾ̂uq* 'it rain-*ɾ̂ukɾ̂au*', may suggest that the meaning of *ɾ̂ukɾ̂au* is in the process of changing from only covering the root modal (deontic) meaning to also covering hearsay evidential meaning. A similar semantic development has been observed in other languages,[20] and future research should seek to explore if this is also the case for *ɾ̂ukɾ̂au* (see Berthelin 2017a,c; for discussion).

To conclude about the validity of Frame D: data on morpho-syntactic restrictions can hardly confirm or reject a semantic hypothesis. They may nevertheless be useful as long as they are interpreted in relation to data obtained through other frames and observations of similar expressions in other languages.

4.3 Sentences and scenarios

This subsection discusses elicitation frames that are especially targeted at pairing sentences with scenarios where they can be appropriately uttered. Frame E below is similar to Bohnemeyer's (2015) Type III:

Frame E: Rendering communicative intention in target language

STIMULUS	TARGET RESPONSE
Context + communicative intention	Target language utterance

In the employment of this frame, the interviewer describes a scenario and asks the consultant which target language sentence he (or the imaginary person in the scenario) would utter in that

[19] Note that I by mistake asked the consultant whether I myself — who is not a speaker of the language — could say the sentence. Note also that she hesitates before confirming that I could say the sentence in the given context. People tend to be less strict when it comes to accepting odd sentences from non-speakers, while a similar sentence might be judged inappropriate if uttered by a native speaker. On the other hand, the Elders working on the project generally seemed comfortable with letting me know when a sentence was wrong, even in the cases where I asked whether I myself could say the sentence (see, e.g., (10) below).

[20] See, e.g., Öhlschläger (1989:233–234), Eide (2006:32), and Palmer (2001:42) on German *sollen*, and Boye (2013:156) on Danish *skulle*. This lexical polyfunctionality is also found in Estonian and Finnish (Kehayov and Torn-Leesik 2009:374).

scenario. Like Frame B, Frame E thus makes use of a context to help fix the meaning of the target language sentence in the response. The crucial difference between the two frames is that Frame E questions ask for the rendering of a communicative intention ("What would you say?") in the target language, whereas Frame B questions ask for a translation from the metalanguage into the target language ("How do you say [metalanguage sentence]?"). That is, the communicative intention is not expressed in the code of the metalanguage in Frame E. Frame E thus allows for less interference from the metalanguage, because there is no metalanguage sentence to be translated.

The challenge is to tailor a scenario where the meaning under investigation is part of the utterance that the consultant would want to say in that scenario. The scenario in (8) is intended to explore how confident inferences are rendered in Uummarmiutun; i.e., it targets a response that conveys something like "My dog **must** (I infer) have eaten the *maktak*":

(8) Scenario: *Let's imagine that you are in the kitchen and so is the dog. You just put a plate with maktak*[21] *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. What do you say?* (Adapted from Cable 2017:10)

The application of Frame E is, however, not straightforward; many communicative intentions may apply in a given scenario, but this does not mean that all of them contain the semantic phenomenon under investigation, e.g., a confident inference. Stimuli like (8) may for instance elicit target language utterances corresponding to "Stupid dog!" or "I should not have put my *maktak* there." The use of (8) is thus far from guaranteed to yield data that shed light on how to express confident inferences in the target language.

An option is, of course, to restrict the response by providing a metalanguage sentence that conveys the target meaning (like in Frame B). In cases where several communicative intentions apply in a scenario, the consultants I worked with would often ask for a metalanguage sentence to translate, because it was unclear which meaning I was aiming at. Another option that is somewhat in between a Frame B stimulus and (8), is to ask the consultant what she 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*?".[22] The interview excerpt in (9) illustrates what this strategy may look like in an actual interview. Note also how the consultant elaborates on her interpretation of the communicative intention and the scenario in the last part of the excerpt. This facilitates the interviewer's understanding of the nuances of meaning conveyed by the target language sentence:

(9) Sentence under discussion:

Qimmira		niriliri**ni**raa			
qimmiq-ra		niri-liq	**-niq**	-raa	
dog	1SG.POSS.SG	eat	quickly	**turns.out**	IND.3SG.SBJ.3SG.OBJ
maktautiga.					
maktak		-uti	-ga		
whale.skin.with.blubber		supply.of	1SG.POSS.SG		

'My dog must have eaten my *maktak*.'

[21] Whale skin with blubber, regularly eaten in small pieces as a delicacy or in larger quantities as part of a meal.

[22] Thanks to Maren Berg Grimstad and Ragnhild Eik (p.c. 2015) for suggesting this strategy to me. Another solution to a problem of a similar nature is given in Bohnemeyer (2015:27–28).

I: Let's imagine that you um... 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 --

C: -- to your *maktak*.

I: Yeah.

C: *Qimmira maktautiga niritir**nir**aa*. You know... 'My dog — ', um... How would you say it now? Oh! 'My dog must have eaten my *maktak*'.
[…]

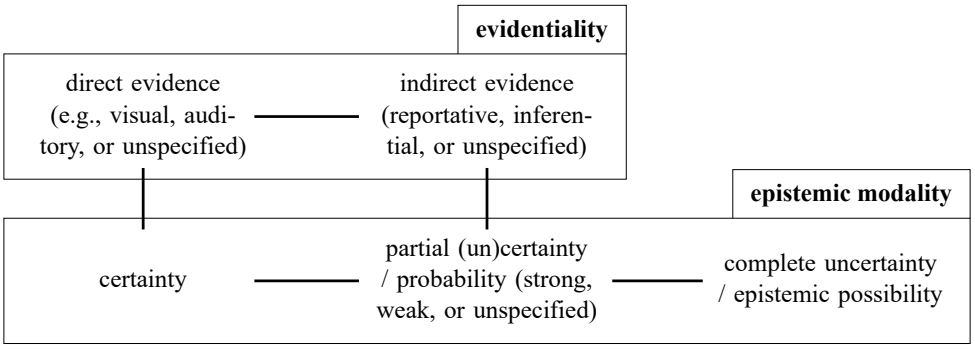
I: How did you say that again?

C: *Qimmirma nirilir**nir**aa*[23] *maktautiga*. I was surprised! I got surprised because I was stirring in the [unintelligible] and I turn around and *taima* ['then'], my *maktak* is gone.

The consultant chooses a sentence that contains the morpheme *niq*. The datum in (9) thus indicates that *niq* can be used when conveying a confident inference.

It is important to keep in mind that data like (9) are far from enough to identify the full extension of *niq*. All we know from (9) is that *niq* is some sort of epistemic expression, and that it is suitable when conveying confident assumptions based on inferential evidence. In the course of determining the extension of an expression, it is of course impossible to test for every possible meaning. Studies of similar expressions in other languages are valuable sources in the process of forming relevant hypotheses about the extension of a linguistic expression. For instance, if we know that another language has an expression that covers confident assumptions based on inferential evidence — like *niq — as well as* confident assumptions based on direct visual evidence, then it might be worthwhile to check if *niq* also covers confident assumptions based on visual evidence. Also, semantic maps, such as the map in Figure 2 below, tend to offer insights into which hypotheses may be worth testing.

Figure 2: van der Auwera and Plungian's (1998) cross-linguistic categories of Evidentiality and Epistemic Modality, mapped onto the semantic map of epistemic expressions (figure adapted and simplified from Boye 2010:11)



The connecting lines in the map reflect that a number of language-specific expressions have moved diachronically between the meanings connected by the line or that they are polyfunctional with respect to these meanings (see Boye 2010). Therefore, if an expression *E* is found to cover

[23] The consultant appears to settle for the word *niri**lir**niraa* rather than *niri**tir**niraa* — 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'.

meaning M (e.g., 'indirect evidence'), then it should be tested whether E can also be used to express the meanings *next to* M in the conceptual space (e.g., 'direct evidence' and 'probability'). In our case, we have data indicating that *niq* is appropriate when the speaker has indirect (inferential) evidence (i.e., the upper right area in the semantic map in Figure 2). It may therefore be worthwhile to check if *niq* is also licensed when the speaker has direct evidence, because this is the neighboring meaning of indirect evidence, which means that a number of language-specific expressions have been found to be polyfunctional with respect to these meanings.

Frame E is useful for exploring how certain meanings are expressed in the target language, because the interviewer can fix the stimulus such that the response is likely to include a target language utterance which contains a given meaning. An interesting alternative to Frame E is employed by Lovick and Tuttle (2019), who use video clips with characters performing foolish and mildly dangerous activities. After showing the video clip, they ask the consultant how they would advise the characters if they were their grandchildren, and thereby they fix the communicative intention to negative directives. Frame E, as well as Lovick and Tuttle's (2019) video-based elicitation, requires that the consultant is comfortable with constructing sentences in the target language. If not, Frame E should be avoided (as should Frames Aii and B).

The next frame to be discussed also aims at pairing utterances containing the expression under investigation with contexts. But whereas Frame E elicits target language utterances, Frame F is a judgment task and thereby falls under Bohnemeyer's (2015) Type V.

Frame F: Judgment of utterance in context

Stimulus	Target response
Context + Target language sentence	Judgment

The excerpt in (10) illustrates the employment of Frame F. The intention is to check if Uummarmiutun *lla* 'be able to, can' (root possibility) can be used to express epistemic possibility. It does not seem to be the case given the dictionary entry 'be able to, can' (Lowe 1984). However, at least 36 languages have modals that are polyfunctional between root and epistemic possibility (van der Auwera and Ammann 2013). It must therefore be checked if *lla* can express epistemic possibility in addition to root possibility. The question in (10) is intended to check if *lla* can be used in an utterance conveying a meaning like "He could have moved/Maybe he moved." The consultant's response indicates that this is not the case:

(10) Sentence under discussion:
Nuu**lla**r̂uq.
nuut **-lla** -r̂uq
move **can** IND.3SG
'He could move.'

I: Let's imagine that we are going to see an old friend, so we are going to his house. And then we come there,[24] 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 *nuu**lla**r̂uq* --
C: (shakes head)
I: No? I don't say --
C: No.
I: How is um... — What makes it strange, that word in that --

C: -- *Nuu**lla**r̂uq*?
I: Yeah?
C: You're telling that person "you shou — "... He or she could move, out of there. Move to another house.[25]

As pointed out in 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 its semantics. The sentence may, for instance, be ungrammatical, or the fieldworker may have pronounced it wrong. All these factors may lead the consultant to reject the sentence in the given context, and it should not lead the researcher to conclude that the rejection is necessarily due to the semantics of the sentence. Follow-up questions like "What makes the sentence strange?" can help the fieldworker gain insights into why the sentence is rejected. Judging from the consultant's response in (10) to why *nuu**lla**r̂uq* 'he move-*lla*' is strange, it appears that this indeed has to do with meaning, rather than morpho-syntax or my pronunciation: she answers by explaining the correct meaning of the sentence, which seems to be exactly what makes the sentence unsuitable in the given scenario.

Frame F is useful for testing hypotheses about what a certain expression in the target language can and cannot be used to express. In (10), the frame yields a response that sheds light on the limitations of the postbase *lla* 'be able to, can'. That is, (10) indicates that *lla* is less suitable for making inferences about the present state of the world (epistemic modal meaning), and more suitable for talking about what a person is able or permitted to do (root modal meaning). Frame F may therefore also be helpful for determining whether *hungnaq*, discussed above, is indeed restricted to an epistemic modal meaning. Recall from Section 4.2 that the morpho-syntactic judgment tasks yielded data that pointed in this direction (data 4–5). However, as discussed in Section 4.2, data yielded by morpho-syntactic judgment tasks need to be interpreted in relation to data obtained through other frames, because morpho-syntactic restrictions are not enough to prove a hypothesis about the semantics of the expression. The data points in (4–5), therefore, need to be augmented with other data before we can conclude that *hungnaq* is restricted to epistemic modal meaning. This could, for instance, be done by means of a Frame F-based question, where the scenario calls for an utterance with root modal meaning, and the interviewer asks the consultant to judge the suitability of a sentence with *hungnaq*. The hypothesis that *hungnaq* is only used for epistemic modal meaning is supported if the sentence is rejected. Also, the hypothesis that *niq* 'turns out' may cover direct evidence and strong epistemic modality may well be explored by means of Frame F questions.

[24] The phrase *And then we come there* might be a slightly marked construction in English, and in hindsight it is clear to me that it is a cross-linguistic transfer from my first language. I usually did not read aloud the stimuli, but rather narrated them more or less freely in order to make the elicitation less mechanical and formal. The odd construction in the stimulus in (10) does not appear to have affected the consultant's understanding of the stimulus, but it could have. Such issues provide an argument for including the interviewer's questions in research publications so that the reader may identify potential aspects of the stimulus that may decrease the validity of the data point. See also Section 5.

[25] A reviewer asked if it could affect the judgment that the ending in *nuu**lla**r̂uq* is not in the past tense. While I cannot rule out this option, it is very likely that it does not: if *nuu**lla**r̂uq* allows for an epistemic reading, it is reasonable to assume that it could yield an 'immediate past' interpretation of the verb like epistemic *hungnaq* does with the punctual base of the verb in (5a) above, and in the verb *anguniarungnaqtuq* 'I think he went hunting', discussed in Table 3 below. See also Lowe's (1985) description of how the ending *-tuq* interacts with the punctual base *katak-* in Section 2.

Frame G below is also a sentence-scenario pairing frame. But compared to Frame F, Frame G is more likely to spark elaborate reflections and creativity. If the consultant likes this type of questions, the responses can provide very interesting information about the subtle meaning nuances of the expressions under investigation, and they can shed light on properties of the expressions that the researcher might never have thought about testing (see also Crane and Fleisch 2019). Frame G corresponds to VI in Bohnemeyer's (2015) taxonomy:

Frame G: Context for utterance

Stimulus	Target response
Target language sentence	Description of scenario

In the employment of this elicitation frame, the interviewer provides a sentence in the target language and asks the consultant to describe a situation or scenario where she would utter that sentence to another speaker of the language. A consultant I worked with described the scenario in (11) when I asked her to imagine a situation in which she would use an utterance of the North Slope Iñupiaq sentence *Aalaak umiaqaġ**niq**suq* 'Aalaak has a boat-*niq*'. It was at an early stage of the project. I wished to understand the meaning of the expression *niq*, but previous interviews had pointed in different directions, and I was not sure which meaning properties would be relevant to test:

(11) Sentence under discussion:
Aalaak umiaqaġ**niq**suq!
Aalaak umiaq-qaq **-niq** -tuq
Aalaak boat have **turns.out** IND.3SG
'Aalaak does have a boat!'

C: The first scenario for me is: I've been wondering with someone else whether this person has a boat. I go and check to see whether that person has a boat. I see that he has a boat, 'cause I... see it. And then I go back, or I holler back to the person: *Umiaqaġ**niq**suq!* 'Yes, he does have a boat!'

This response indicates that the meaning of *niq* pertains to realizing that something is the case. Note also that the consultant highlights that she sees the state of affairs. A reasonable follow-up question for another (or the same) session is, therefore, whether a given sentence with *niq* is restricted to realization through visual evidence or allows realization through any type of evidence. For this purpose, a Frame F based question, as in (12), may be useful:

(12) I: When saying "*Aalaak umiaqaġ**niq**suq*", how does the speaker know... — has he seen the boat? Has he seen *Aalaak* with the boat? Has he heard from somebody that *Aalaak* has a boat?
C: He can hear from somebody.

As it turns out, *niq* is not restricted to a specific type of information source: *niq* is licensed by reportative (12) as well as visual (11) evidence (see Berthelin 2012 for details).

Another example of responses that may be elicited through the employment of Frame G is rendered in (13). The excerpt is from a conversation where the interviewer asks the consultant *a*) whether certain words exist in the language, and if so *b*) to describe scenarios where these words can be used:

(13) Sentence under discussion:
Uti**rumiñaq**tuq.
utiq **-yumiñaq**-tuq
come.back **may** IND.3SG
'He could come back.'

I: *Uti**rumiñaq**tuq*?
C: Yeah! There is. *Uti**rumiñaq**tuq* — uh... — *uti**rumiñaq**tuq*. 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."

Frame G is especially useful when the researcher is unsure which properties are relevant to check for, and she wants to explore the intuitive meaning nuances associated with the expression under investigation. Another example is provided in (14), which is also part of the exploration of the meaning of North Slope Iñupiaq *niq*. Note that I do not ask specifically for a scenario, but the consultant offers elaborate descriptions of the meaning nuances she associates with *niq* and the conversation develops into one about the details of situations where an utterance with *niq* is suitable:

(14) Sentences under discussion:

a. Simik paammaksimaruaq uvlaapak.
Simik paammak-sima-tuaq uvlaa -pak
Simik crawl PRF IND.PST.3SG morning during
'Simik was crawling this morning.'

b. Simik paammak**niq**suaq uvlaapak!
Simik paammak-**niq** -tuaq uvlaa -pak
Simik crawl **turns.out** IND.PST.3SG morning during
'Simik was crawling this morning!'

I: You told me that the papa can say *Simik paammaksimaruaq uvlaapak* to somebody else.
C: *Ii* ['yes'].
I: Could he alternatively say *Simik paammak**niq**suaq uvlaapak* to somebody else?
C: He can also say that. But usually ***niq*** is to somebody close... somebody close to you. *Paammak**niq**suaq*.
I: If the person is close to him [= the papa]...?
C: Yeah, kind of like, brag or being proud --
I: So this ***niq*** does have some kind of emotion in it?
C: -- and it's usually to somebody close to you. I mean — to a person of the street you can't say that. *Paammaksimaruaq* probably would say in general, but *paammak**niq**suaq* is more like, "I am really proud" and it's to somebody you are close to.

It is important to keep in mind that not everybody prefers to explain their language through scenarios (see also Bohnemeyer 2015:40). Others paint elaborated scenarios in their responses to Frame G questions (as in (11) and (14)) and reflect extensively on the subtle meaning nuances associated with the given expression by continuing the description and comparing different scenarios where the sentence does and does not fit. Nevertheless, the researcher who wishes to collect such

elaborations should not only consider critically when and with whom to collect them, but also how she interprets them. Regardless of whether the elaborations are requested or volunteered, they are a type of abstract generalizations. As Matthewson (2004) correctly points out, most native-speaker generalizations do contain a kernel of truth, but often do not have predictive power (Matthewson 2004:380). For this reason, data consisting of elaborations alone cannot validate a hypothesis about the semantics of an expression, and they need to be interpreted in relation to data obtained through other frames. What they do provide are hints about meaning properties that the non-native researcher might not otherwise have thought about testing (cf. Section 3; Crane and Fleisch 2019).

4.4 Minimal pairs

This subsection discusses the use of stimuli that involve minimal pairs. Frame H below falls under Bohnemeyer's (2015) Type VI, in that it involves target language sentences in the stimulus and the target response is a type of metalinguistic description. Like Frame G, Frame H tends to facilitate detailed elaborations:

Frame H: Elaboration on minimal pairs

Stimulus	Target response
Two target language sentences that form a minimal pair	Elaboration on their difference

The interviewer asks the consultant about the difference between two target language sentences that form a minimal pair. At least one of the sentences contains an expression under investigation. Some consultants may choose to provide translations of the respective sentences before explaining the difference between them. Others may describe scenarios where one of the sentences is more suitable than the other.

It is important to note that the use of data obtained through Frame H requires critical reflection, because a request to compare sentences may yield a response consisting of abstract generalizations. We generally do not have direct access to the abstract rules and generalizations we employ when we speak our languages (Matthewson 2004; see also Deal 2015), regardless of how many years of experience we may have as language workers. Responses where a consultant explains the difference between two sentences are therefore unlikely to pin down the exact conditions under which the expression(s) under investigation can be used. One may therefore be rightfully skeptical to the validity of frames like Frame H (and Frame I further below). This skepticism, I believe, should not keep us from using such frames: as I shall argue in due course, they do have some advantages. But it is absolutely necessary that we use the data obtained through these methods as clues that help us decide which meanings to test for — *not* as confirmations or rejections of hypotheses about the expression's semantic restrictions. And we may perhaps even question their status as 'data', and rather treat them as clues that we use in the initial process towards hypothesis formation.

The employment of Frame H may be useful in cases where the researcher has no real clue about which meanings to test for. Throughout the data collection on the semantics and pragmatics of *niq* (Berthelin 2012), it turned out that the meaning of *niq* was very hard to identify by means of pairing sentences containing *niq* with scenarios (i.e., through Frames E, F, and G). As with other non-truth-conditional expressions, it was not straightforward to form scenarios where the presence of *niq* rendered the sentence wrong: usually, sentences with *niq* were accepted in the same scenarios

as the corresponding sentences without *niq* (see also Matthewson 2004:372, on felicity judgments). Frame H was suggested to me by Prof. Lawrence Kaplan (p.c. 2011) as a way of asking 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. When consultants elaborated on the differences between a sentence with *niq* and the corresponding sentence with another postbase (as in (15)) or one with no postbase, it seemed that while both sentences were often acceptable in the same situations, *niq* was associated with a notion of affirmation:

(15) Sentences under discussion:

a. Sanatumaruq.
sana -tuq -sima-ruq
carve good.at PRF IND.3SG
'He is good at carving.'

b. Sanatu**niq**suq.
sana -tuq **-niq** -tuq
carve good.at **turns.out** IND.3SG
'He *is* good at carving.'

On the difference between sanatumaruq *and* sanatu**niq**suq*:*

C: I think it is more straightforward that it is so — *sanatumaruq* — that he does a lot of carving and he is good at it. *Sanatu**niq**suq* is um — further affirms — it's a further affirmation.

As argued above, Frame H is only suitable if it is used for the right purpose — e.g., to help the researcher who is stuck. What (15) tells us is not that the restriction on *niq* is affirmation. Rather, (15) tells us that it may be worthwhile to *test* if *niq* is only licensed in contexts where the speaker intends to affirm something — e.g., through Frame F.

A different version of the minimal pair frame is to ask the consultant to choose among two sentences in relation to a context:[26]

Frame I: Choosing a sentence from a minimal pair

Stimulus	Target response
Two target language sentences that form a minimal pair + a context	Choice / elaboration on their difference

As will be illustrated below, such a question may elicit insights into subtle meaning differences. The elicitation goal and the stimulus are thus somewhat similar to the Frame H based stimulus in (15). But whereas Frame H questions ask the consultant to explain the difference between the two sentences, Frame I questions ask the consultant to choose the most suitable utterance in relation to a scenario. One of the advantages of Frame H is that the question is more open-ended, because the consultant herself chooses how she would like to explain the meanings of the sentences. Frame I, on the other hand, may be easier to answer compared to Frame H, which asks for a lot of imaginative

[26] 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.

work on the spot. Another advantage of Frame I is that it allows the fieldworker to test meaning nuances in relation to a context, which means that she can test what the expression might be sensitive to.[27] In this sense, Frame I is a combination of Frames F and H.

Excerpt (17) is a response to the Frame I stimulus in (16). The intention behind the elicitation of these data was to explore the subtle meaning that *niq* adds to the utterance interpretation in North Slope Iñupiaq. Judging from (17), the presence of *niq* might be associated with the notion of a realization process.

(16) Sentences under discussion:

a. Qamutitallui**niq**suq.
qamutitaq-lla -ui **-niq** -tuq
drive.car can NEG **turns.out** IND.3SG
'He can't drive a car.' [*niq*]

b. Qamutitaluichuq.
qamutitaq-lla -ui -tuq
drive.car can NEG IND.3SG
'He can't drive a car.'

SCENARIO: Niayuk asks Aalak: *Simik qamutitallava?* ['Can Simik drive?'] And then Aalak says *Ii, Simik qamutitallaruq* ['Yes, Simi can drive']. But then the next day Aalak sees Simik crashing a car as he is trying to park at the store. So Aalak goes back to Niayuk and says *Simik qamutitallui**niq**suq* or *Simik qamutitaluichuq*?

(17)
C: *Qamutitallui**niq**suq*. It doesn't — it turns out that Simik is not a very good driver. *Qamutitallui**niq**suq*.
I: Would that be a better response than simply saying *Qamutitaluichuq*?
C: *Qamutitaluichuq*...?
I: Yeah?
C: It has to do with *qamutitalui**niq**suq* — it turns out that he is not a very good driver because of what I've witnessed. *Qamutitaluichuq* is um... — it is so. *Qamutitaluichuq*. 'He's not a very good driver'.

It is 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 that form a minimal pair. It is likely that Frames H and I are especially useful in studies 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. This means that while Frames H and I are useful in the exploration of subtle meaning nuances, data obtained through these frames should be validated through more rigorous testing — e.g., through Frame F, which is good for testing whether an expression E has a certain meaning M. In the case of excerpt (17), the clue that *niq* may be associated with a realization process is (partly) validated by datum (11), which was elicited through Frame G: *niq* marks a connection between the utterance and the previous discourse by indicating that the speaker has realized that the propositional content is a true description of the world, and that this realization is relevant to the previous discourse (see Berthelin 2012 for a full analysis).

[27] Again, such requests to introspect are fraught with the same challenges as those noted for Frame H, and hence the data has the status as clues for further investigation rather than data (see Matthewson 2004).

4.5 Interaction of the frames in the interview session

Throughout the paper, the various elicitation frames have been illustrated in isolation. A field-linguistic interview session, however, often employs a combination of elicitation frames (see also Bohnemeyer 2015:23). The interviewer may need to tweak and create scenarios and stimuli on the spot to ask relevant follow-up questions. For example, when learning that a sentence with *niq* can be used in a scenario where the speaker observes the state of affairs firsthand (e.g., through Frame G), it may be useful to ask if the same sentence can also be used when the speaker has reportative evidence (Frame F), in order to check the extension of *niq*. Also, the consultant may very well initiate responses of certain types that shed light on the meaning of the expression under investigation, even though the interviewer has not provided a stimulus, and the interview takes the form of a conversation about meaning, rather than a strict Q and A format.

Table 3 provides an example of the interaction between Frames Aii, E, F, and G in an actual field-linguistic interview. Note that the consultant is the one to initiate the use of Frame Aii, E, and G responses throughout our conversation. The purpose of the session was, among other things, to check if *lla* 'be able to, can' and *hungnaq* 'probably' cover epistemic modal meanings.[28]

Sentences under discussion in Table 3

Angunia**lla**r̂uq	Anguniariaqtuq	Anguniar**ungnaq**tuq
anguniaq-**lla** -tuq	anguniaq-iaq -tuq	anguniaq-**hungnaq**-tuq
hunting **can** IND.3SG	hunting to.go.and IND.3SG	hunting **probably** IND.3SG
'He can hunt.'	'He went hunting.'	'I think he went hunting.'

Table 3: Excerpt with identification of elicitation frames

			Research question: Does *lla* cover epistemic modal meaning?
1.	I:	My husband, he 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, and the person, he asks me where my husband is. Can I then say, um, *Angunia**lla**r̂uq* ['He can hunt']?	**Frame F question**: *Stimulus*:Scenario + target language sentence *Target response*:Judgment
2.	C:	*Anguniariaqtuq*. *Angunia**lla**r̂uq* is 'He can hunt'. When you say *anguniа**lla**r̂uq* — but when you say *Anguniariaqtuq*, 'He went hunting'. And if you wanna put *Angunia**lla**r̂uq*, you put 'He can go hunting'.	**Frame F response**: The *lla*-sentence is rejected in the scenario **Frame E response**: C gives a scenario appropriate sentence **Frame Aii response**: C translates *lla*-sentence

[28] As for *lla*, this could seem like a far-fetched hypothesis given the root-modal meaning listed in the dictionary entry. But recall from Section 4.3 that several languages display root-epistemic overlap (van der Auwera and Ammann 2013). It is therefore not irrelevant to test *lla* for epistemic modal meaning.

3.	I:	Like I'm talking about his skills or --	
4.	C:	Yeah... because, uh... If somebody came and — if somebody came and looking for partner, like, you know, looking for a partner to go with hunting, then you tell them, "Yeah, my husband can go hunting with you." *Anguni**alla**ĥuq*, 'He could go hunting'.	**Frame G response**: C describes appropriate scenario for *lla*-sentence
			Research question: Does *hungnaq* cover epistemic possibility?
5.	I:	But in this one where he went off with his hunting partner and all that, and the person calls and asks where he is, could I also say maybe *Anguniа**rungnaq**tuq*?	**Frame F question**: *Stimulus*:Scenario + target language sentence *Target response*:Judgment
6.	C:	No, you already know that he's out already. You already know that he's hunting. *Anguniа**rungnaq**tuq* — you're thinking, "I think he went hunting."	**Frame F response**: Rejects target language sentence as a vehicle for intended meaning
7.	I:	Then I sound too insecure, maybe?	
8.	C:	Uh... But you already know he's — he got ready for going hunting putting his — yeah. So you can't say *Anguniа**rungnaq**tuq*. Unless, uh... He went out, out of the house, and you didn't see him get ready to go hunting.	**Frame F response** cont.: C elaborates on her reason for rejecting *Anguniа**rungnaq**tuq* **Frame G response**: appropriate scenario for *Anguniа**rungnaq**tuq*
9.	I:	I just saw that he left?	
10.	C:	Yeah, you just saw that he left. Then you could say, uh... "And he took off with his ski-doo [snowmobile]." Then you could say *Aguniа**rungnaq**tuq*. You're thinking that he went hunting. Maybe.	**Frame G response** cont.

Before we identify the insights yielded by this excerpt, some discussion of the choice of stimuli is in order. One may ask if the scenario in the initial stimulus (row 1) targets epistemic modal meaning at all: the person in the scenario arguably has very strong reasons to believe that her husband went hunting, and thereby strong reasons to use an unqualified statement (i.e., a simple, non-modalized sentence) to describe his whereabouts. This is also how the consultant interprets the scenario. However, in my experience — as a language user and as a field linguist — it varies how much evidence

we feel we need to make a claim. In situations like the scenario in the row 1, some people may prefer to qualify their claim with an epistemic modal, because they feel they cannot know for sure that the husband is hunting — perhaps he just brought his hunting gear to his hunting partner's house so that they could clean it together. For this reason, the scenario may target epistemic modal meaning. It turns out that the consultant views the scenario as a situation where you do not have to qualify your statement with an epistemic modal, or at least not an epistemic possibility modal. Later in the interview (row 8), she rejects the *hungnaq*-sentence *because* "you already know he's — he got ready for going hunting." This demonstrates how important it is to talk about the scenario to understand how the consultant interprets the scenario, and which communicative intentions she finds suitable in that scenario, in order to identify the contextual and communicative properties that license or block the use of the given expression(s). In other words, what the interviewer needs to understand is not just *whether* a certain sentence is rejected or accepted in a certain scenario, but more importantly, *why*.

The responses in Table 3 indicate that *lla* 'be able to, can' does not cover epistemic certainty. The consultant interprets the scenario such that an expression of full certainty would be appropriate, and *lla* is apparently not suitable for this communicative intention (cf. row 6: "you already know he's — he got ready for going hunting"). Technically, the data in Table 3 still do not rule out that *lla* can be used to cover other epistemic meanings like *un*certainty (possibility): after all, *lla* was only rejected as a vehicle for *full* (unqualified) *certainty*. It does seem though that *lla* is strongly associated with root modal meaning ('ability') given the consultant's translation (row 2) and her description of a scenario for the *lla*-sentence (row 4). A strong association with root possibility does not, however, rule out the ability to express epistemic possibility, so we need to test directly if *lla* can convey uncertainty — e.g., through Frame F (see excerpt (10)).

As for *hungnaq*, the consultant's reason for rejecting the *hungnaq*-sentence seems to be that she finds that the person in the scenario can indeed be sure that her husband had gone hunting (see row 6). It thus appears that *hungnaq* does not cover full epistemic certainty. *Hungnaq* does, however, seem to cover epistemic possibility meanings like 'maybe', judging from rows 8 and 10. Table 3 does not indicate whether *hungnaq* is restricted to epistemic possibility; it could still be that *hungnaq* covers weak ('highly likely') epistemic necessity. This can be tested by employing Frame F, and letting the scenario be a context where the speaker has good but not fully sufficient reasons to assume that the propositional content modified by *hungnaq* is true.[29]

5 Rendering data in papers

This paper uses direct quotes from field-linguistic interviews to illustrate what the employment of the respective elicitation frames may look like in an actual interview session. The use of direct quotes from interviews seems to be most common in papers on methodological issues like this one and Cover (2015:249), and when making points about methodology (Crane and Fleisch 2019:18–19). This brief section discusses some of the advantages of using direct quotes from interviews in journal publications on fieldwork-based linguistic analysis in general — i.e., not only when discussing methodology, but as data points.

Language consultants are rarely quoted at length in the field linguistics literature (see Cable

[29] The data and analyses in Berthelin (2017a) lead to the conclusion that *hungnaq* covers epistemic possibility ('maybe') as well as weak epistemic necessity ('highly likely'), but not full certainty. Hence the gloss 'probably' throughout the paper.

2019 footnote 6 for an exception). Especially in journals, a datum is usually rendered as the sentence under discussion, plus an indication of the consultant's judgment (as in (4–5) above), or as a description of a context plus a sentence that has been judged appropriate in that context. Some scholars also include a supplementary comment offered by the consultant in the data points (see, e.g., Matthewson, Rullmann, et al. 2007; Matthewson and Todorović 2018; Crane and Fleisch 2019:14, data points (25)-(27)) This way of rendering data has several benefits. As compared to the unstructured and space-consuming data points presented here and in Berthelin (2017a,b,c), they are easy to read and process, they save space, and they show in an organized way how the sentence has been evaluated by the consultant. On the other hand, quoting the consultant's answers as well as the researcher's question has its own advantages. First of all, it increases transparency. The reader can see exactly how the question has been phrased, spot potential leading questions, and in turn evaluate the validity of the individual data point herself. In (14), for instance, it is possible that my question is leading when I propose that the use of *niq* is associated with emotion. Secondly, quotes show exactly what the consultant has said in response to the stimulus that, together with other data, has led the researcher to draw the given conclusions about the meaning of the expressions under investigation, and in turn to propose the given semantic and pragmatic analysis. This is in line with Cover and Tonhauser's (2015:343) call for more transparency with regards to what consultants have said in interviews. Finally, quotes from interviews show how the consultants have phrased their explanations and descriptions of the subtle meaning nuances of expressions in the languages that belong to them.

I do not hold the view that using quotes as data points is right for every project or every paper that uses semantic fieldwork data. And some consultants may indeed not wish to be quoted directly. What I do wish to propose is that the use of quotes from interview sessions can offer increased transparency, and at the same time show the consultants' take on their language. This may be particularly relevant when the consultant has shared explanations and elaborations — e.g., as responses to Frame G, H, and I questions. Like any other data points, such quotes should never stand alone without analysis, and nor should they be framed as results. What they do offer is a glimpse of what the consultants have said, and the body text in the paper should of course explicate what (the researchers assume) the data points (together with other data points) indicate about the meaning of the expression under investigation.

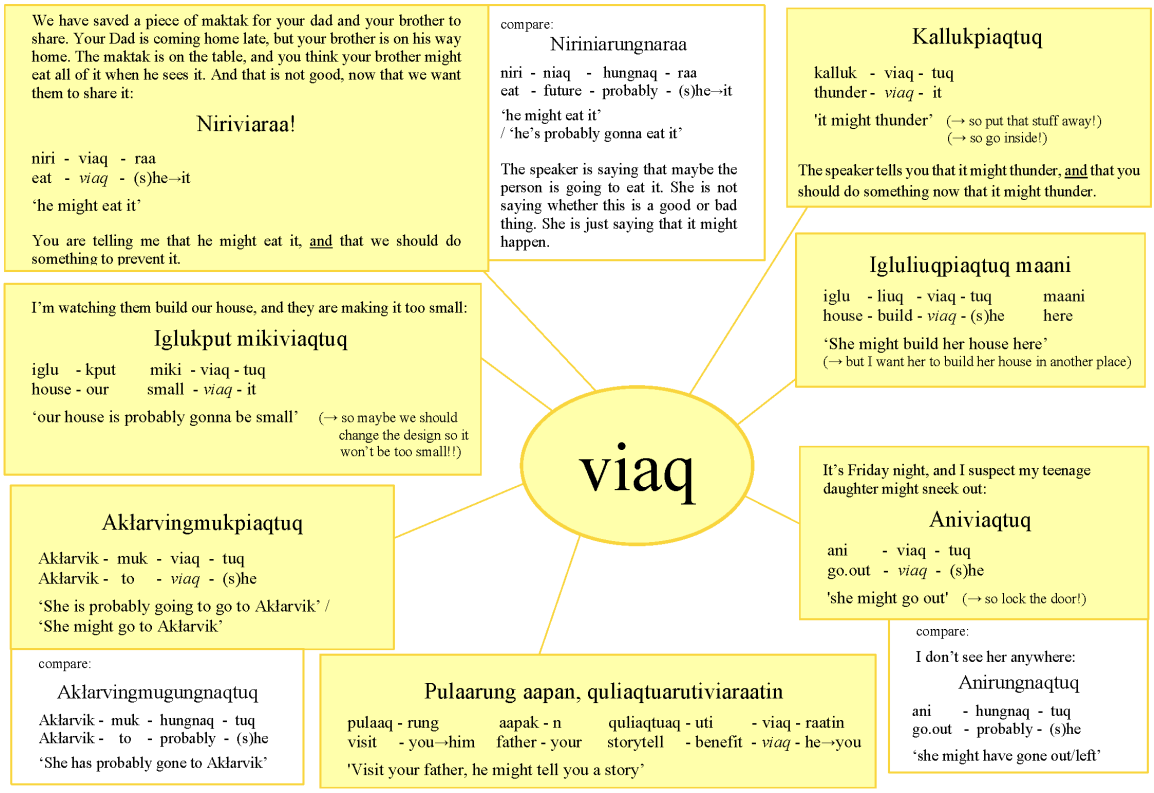
6 Elicitation data and teaching materials

As this is a methodological paper, the main foci are data collection, choice of elicitation frame, and interview questions. Nevertheless, as most modern linguistic researchers are aware, the collected data should — preferably and when possible (see Crippen and Robinson 2013 for discussion) — benefit the language community in addition to informing a linguistic analysis. This section shows how data obtained through the elicitation frames presented above can be used to create teaching materials.

As Burton and Matthewson (2015) point out, datasets obtained through the storyboard method are easily converted into teaching materials. The pictures and the collected story narrations are basically illustrated stories in the target language that can be used to teach, e.g., literacy. Data sets obtained through elicitation interviews are arguably not as easily transformed into visually appealing teaching materials. They may, nevertheless, be easily converted into teaching materials that serve a different purpose, by offering a nice overview of the range of meanings that can be expressed through an utterance with one of the expressions under investigation. Throughout our collaboration,

one of the Elders I worked with, Panigavluk, suggested making a tool that we ended up calling 'suffix-circles'.[30] Figure 3 is a suffix-circle based on data from Uummarmiutun.

Figure 3: Suffix-circle for *viaq* 'might (in the sense of potential consequence)' (Panigavluk, Mangilaluk, and Kavakłuk 2015)



In the middle of the sheet is the suffix.[31] Each 'leaf' gives an example sentence that contains the suffix, along with a short description of a scenario where the sentence can be uttered. The scenarios are taken from Frame E and F questions, or they were offered by consultants as responses to Frame G questions. Rather than providing a mere translation of the abstract dependent morpheme — which hardly covers the range of meanings of the expression — the suffix-circle allows the language learner to grasp the abstract sense of the postbase, because it provides many different examples of what a sentence with that expression can be used to communicate. The *viaq*-circle has three additional white leaves that allow the language learner to compare the meaning of *viaq* and *hungnaq*. *Viaq* and *hungnaq* are both concerned with epistemic modality, but *viaq* is restricted to assumptions about the future — often with an apprehensive meaning aspect.

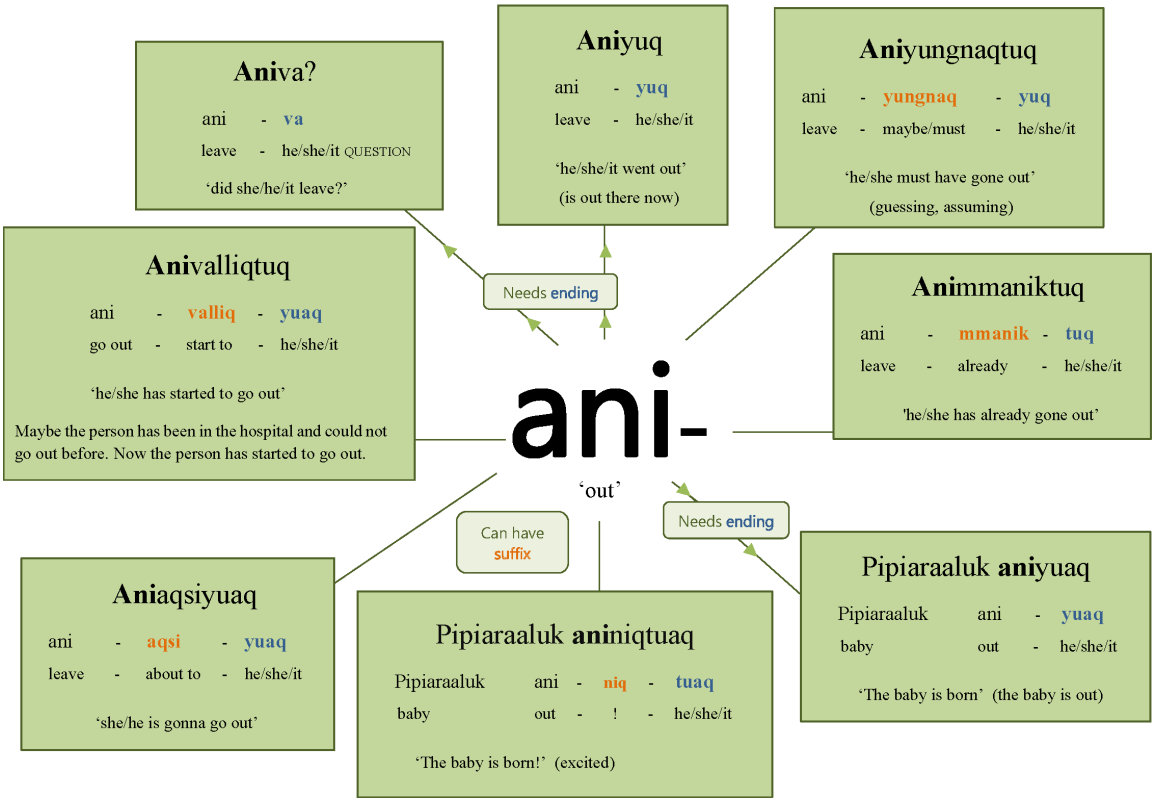
Suffix-circles are especially useful for teaching abstract and polysemous expressions, because they showcase the range of meaning nuances that the expression can be used to communicate in different contexts. A slightly different version of the suffix-circle was proposed by Mimirlina. We

[30] More teaching materials are available at Panigavluk, Mangilaluk, Kavakłuk, Agnagullak, Suvvatchiaq, Mimirlina, and Siliuyaq (2015).

[31] Some language teachers use the term 'suffix' rather than 'postbase'. See also the terminological discussion in footnote 3 above.

called these 'word-circles'. The word-circle in Figure 4 is based on data from the Inuktut dialect Siglitun.

Figure 4: Word-circle for *ani-* 'go out' (Mimirlina 2015)



Word-circles are especially useful for giving a sense of the structure of a polysynthetic language like Inuktut. Like other Inuktut dialects, the Siglitun lexicon contains a large number of postbases. A word-circle has a root (or "base" in Nagai's (2006) terms), such as *ani-* 'go out', in the middle. Roots are not used in isolation; they need an ending that reflects at least person, number and mood. Between the root and the ending, one can have any number of postbases (cf. Figure 1 in Section 2). Each leaf in a word-circle contains the root with different postbases between the root and the ending, along with a short description of a scenario where the word (or sentence) can be used. In the suffix-circles and the word-circles alike, the example sentences are followed by a non-technical interlinear glossing of the morphemes in the words. As some language learners pointed out, the glossing "opened up" the structure of the language. The word-circles and suffix-circles also include brief pedagogical explanations of grammatical or phonological phenomena that are relevant to the example sentences (see Panigavluk, Mangilaluk, and Kavakłuk 2015; Mimirlina 2015).

7 Conclusions

The semantic fieldworker needs to construct interview guides that test hypotheses and inspire the consultants to share their knowledge about the subtle meaning nuances of the expressions in their language. This paper has illustrated and discussed the application of nine elicitation frames and

their advantages and limitations. In this way, the paper has contributed to the exploration and understanding of how one may choose elicitation questions for, and use these questions in, semantic fieldwork.

As argued throughout the paper, the choice of elicitation frame should depend on *a*) the hypothesis we want to test, *b*) what or how much we already know about the expression under investigation, and *c*) which types of tasks the consultant prefers to work with. If, for instance, the consultant is not comfortable with constructing sentences in the target language, the interviewer should avoid Frames Aii, B, and E. Instead, she may use frames where the target response is a judgment of a target language sentence (in a context), as in Frames C, D, and F, or an explanation of the target language sentence in the metalanguage, as in Frames G, H, and I.

As compared to the others, Frame G puts a lot of work on the consultant, because it asks for a description of an imaginative scenario. While such frames do ask for a lot of creativity, they are also the type of frames that tend to spark elaborative insights into the language. Another benefit of these frames is that they elicit responses where the consultant explains the properties of her language in her own words. Such responses allow the interviewer to learn about properties of the expressions that she may never have thought of testing. However, because requests for elaborations and explanations are in essence requests for abstract generalizations (see Matthewson 2004), these data should not be used to confirm or reject hypotheses, but rather as indications of meaning properties that may be worth testing. Frame F is suitable for testing concrete hypotheses, and thus applicable when the researcher has some knowledge of the semantics of the expression under investigation. The same is true for Frames C and D, and in addition, these two require the researcher to be familiar with the syntax of the language and cross-linguistic tendencies to design the stimulus. Frames A, B, and E, on the other hand, are useful in the (initial) exploration of how certain meanings are rendered in the target language.

Because we collect semantic fieldwork data in order to communicate our findings to the scientific as well as the language community, the paper has made a proposal for how to present data in publications, and a suggestion on how to make teaching materials from elicitation data. The inclusion of direct quotes from interview sessions is one way of increasing transparency in our publications: the reader can spot potential leading questions, see what the consultants have said that led the researcher to propose a given semantics, and, not least, see how the consultants have explained the subtle meaning nuances of expressions in their language. As for teaching materials, I have provided an example of a suffix-circle and a word-circle, which are the products of Panigavluk's and Mimirlina's ideas respectively. The circles are based on elicitation data, and such circles can be used to showcase the range of meanings of abstract and dependent morphemes.

References

Anderbois, S., & Henderson, R. (2015). Linguistically establishing discourse context: Two case studies from Mayan languages. In R. Bochnak & L. Matthewson (Eds.), *Methodologies in semantic fieldwork* (pp. 207–232). Oxford University Press.

Berthelin, S. R. (2012). *The semantics and pragmatics of the North Slope Iñupiaq postbase* niq (M.A. thesis). Norges teknisk-naturvitenskapelige universitet [Norwegian University of Science and Technology]. Trondheim, Norway. https://ntnuopen.ntnu.no/ntnu-xmlui/handle/11250/244045

Berthelin, S. R. (2017a). *The semantics and pragmatics of Uummarmiutun modals* (Ph.D. dissertation). Norges teknisk-naturvitenskapelige universitet [Norwegian University of Science and Technology]. Trondheim, Norway. https://ntnuopen.ntnu.no/ntnu-xmlui/handle/11250/2480157

Berthelin, S. R. (2017b). Towards a relevance-theoretic account of the Iñupiaq hearsay evidential *guuq*. In A. Piskorska & E. Wałaszewska (Eds.), *Applications of relevance theory: From discourse to morphemes* (pp. 44–63). Cambridge Scholars Publishing.

Berthelin, S. R. (2017c). Two Uummarmiutun modals: Including a brief comparison with Utkuhikšalingmiutut cognates (R. Maddeaux, Ed.). *Toronto Working Papers in Linguistics*, *39*. Special Issue On Indigenous Languages. https://twpl.library.utoronto.ca/index.php/twpl/article/view/28730

Bochnak, R., & Matthewson, L. (2015). Introduction. In R. Bochnak & L. Matthewson (Eds.), *Methodologies in semantic fieldwork* (pp. 1–10). Oxford University Press.

Bohnemeyer, J. (2015). A practical epistemology for semantic elicitation in the field and elsewhere. In R. Bochnak & L. Matthewson (Eds.), *Methodologies in semantic fieldwork* (pp. 13–46). Oxford University Press.

Boye, K. (2005). Modality and the concept of force-dynamic potential. In A. Klinge & H. H. Müller (Eds.), *Modality: Studies in form and function* (pp. 49–80). Equinox Publishing.

Boye, K. (2010). Semantic maps and the identification of cross-linguistic generic categories: Evidentiality and its relation to epistemic modality. *Linguistic discovery*, *8*(1).

Boye, K. (2013). Modality. In C. Chapelle (Ed.), *The encyclopedia of applied linguistics* (pp. 3709–3713). John Wiley and Sons.

Briggs, J. L., Johns, A., & Cook, C. (2015). *Utkuhiksalingmiut uqauhiitigut uqauhiliurut: Dictionary of Utkuhiksalingmiut Inuktitut postbase suffixes*. Nunavut Arctic College.

Burton, S., & Matthewson, L. (2015). Targeted construction storyboards in semantic fieldwork. In R. Bochnak & L. Matthewson (Eds.), *Methodologies in semantic fieldwork* (pp. 135–156). Oxford University Press.

Cable, S. (2017). The expression of modality in Tlingit: A paucity of grammatical devices. *International Journal of American Linguistics*, *83*(4):619–678.

Cable, S. (2019). Describing future eventualities in tlingit: The storyboards Hawaii Trip and Imagining the Future (L. Matthewson, S. Burton, & P. Littell, Eds.). *Semantic Fieldwork Methods*, *1*(2).

Cover, R. T. (2015). Semantic fieldwork on TAM. In R. Bochnak & L. Matthewson (Eds.), *Methodologies in semantic fieldwork* (pp. 233–268). Oxford University Press.

Cover, R. T., & Tonhauser, J. (2015). Theories of meaning in the field: Temporal and aspectual reference. In R. Bochnak & L. Matthewson (Eds.), *Methodologies in semantic fieldwork* (pp. 306–349). Oxford University Press.

Crane, T. M., & Fleisch, A. G. (2019). Towards a fieldwork methodology for eliciting distinctions in lexical aspect in Bantu. In L. Aunio & A. Fleisch (Eds.), *Linguistic diversity research*

among speakers of isiNdebele and Sindebele in south africa (pp. 129–179). Finnish Oriental Society.

Crippen, J. A., & Robinson, L. C. (2013). In defense of the lone wolf: Collaboration in language documentation. *Language Documentation & Conservation*, *7*:123–135.

Deal, A. R. (2015). Reasoning about equivalence in semantic fieldwork. In R. Bochnak & L. Matthewson (Eds.), *Methodologies in semantic fieldwork* (pp. 157–203). Oxford University Press.

Dorais, L.-J. (2010). *Language of the inuit: Syntax, semantics, and society in the Arctic* (Vol. 58). McGill-Queen's University Press.

Eide, K. M. (2006). *Norwegian modals*. De Gruyter Mouton. https://www.degruyter.com/view/title/16708

Fortescue, M. D. (1980). Affix ordering in West Greenlandic derivational processes. *International Journal of American Linguistics*, *46*(4):259–278.

Fortescue, M. D. (1983). *A comparative manual of affixes for the Inuit dialects of Greenland, Canada, and Alaska*. Nyt Nordisk Forlag.

Fortescue, M. D. (1985). The degree of interrelatedness between Inuit dialects as reflected by percentages of shared affixes. *International Journal of American Linguistics*, *51*(2):188–221.

François, A. (2019). A proposal for conversational questionnaires. In A. Lahaussois & M. Vuillermet (Eds.), *Methodological tools for linguistic description and typology* (pp. 155–196). University of Hawai'i Press. http://nflrc.hawaii.edu/ldc/sp16/

ᐃᓄᐃᑦ ᑕᐱᓕᑦ ᑲᓇᑕᒥ [Inuit Tapiriit Kanatami]. (2020). *Inuit Tapiriit Kanatami: The national representational organization protecting and advancing the rights and interests of Inuit in Canada*. ᐃᓄᐃᑦ ᑕᐱᓕᑦ ᑲᓇᑕᒥ [Inuit Tapiriit Kanatami]. Retrieved April 30, 2020, from https://www.itk.ca/

Johns, A. (2014). Derivational morphology in Eskimo-Aleut. In R. Lieber & P. Štekauer (Eds.), *The Oxford handbook of derivational morphology* (pp. 702–723). Oxford University Press.

Kehayov, P., & Torn-Leesik, R. (2009). Modal verbs in balto-finnic. In B. Hansen & F. de Haan (Eds.), *Modals in the languages of europe: A reference work* (pp. 363–402). De Gruyter Mouton.

Lexico. (2020). *Elicit*. Retrieved April 30, 2020, from https://www.lexico.com/definition/elicit

Lovick, O., & Tuttle, S. G. (2019). Video elicitation of negative directives in Alaskan Dene languages: Reflections on methodology. In A. Lahaussois & M. Vuillermet (Eds.), *Methodological tools for linguistic description and typology* (pp. 125–154). University of Hawai'i Press. http://nflrc.hawaii.edu/ldc/sp16/

Lowe, R. (1984). *Uummarmiut uqalungiha mumikhitchirutingit: Basic Uummarmiut Eskimo dictionary*. Committee for Original Peoples Entitlement.

Lowe, R. (1985). *Uummarmiut uqalungiha ilihauřřutikřangit: Basic Uummarmiut Eskimo grammar*. Committee for Original Peoples Entitlement.

MacLean, E. A. (1993). *North Slope Inupiaq grammar, first year, revised* (Third Edition) [With supplement: North Slope Inupiaq dialogues]. Alaska Native Language Center.

MacLean, E. A. (2014). *Iñupiatun uqaluit taniktun sivuninit / Iñupiaq to English dictionary*. University of Alaska Press.

Matthewson, L. (2004). On the methodology of semantic fieldwork. *International Journal of American Linguistics*, *70*(4):369–415.

Matthewson, L., Rullmann, H., & Davis, H. (2007). Evidentials as epistemic modals: Evidence from St'át'imcets (J. von Craenenbroeck, Ed.). *Linguistic Variation*, *7*:201–254.

Matthewson, L., & Todorović, N. (2018). Temporal properties of attitude complements: The serbian-gitksan connection. *Proceedings of the Tenth Conference on the Semantics of Under-Represented Languages in the Americas*. https://linguistics.sites.olt.ubc.ca/files/2019/06/Matthewson_Todorovic_Temporal_properties_attitude_complements_Serbian_Gitksan-connection.pdf

Max Planck Institute for Evolutionary Anthropology. (N.d.). *Typological tools for field linguistics*. Max Planck Institute for Evolutionary Anthropology. Retrieved April 30, 2020, from https://www.eva.mpg.de/lingua/tools-at-lingboard/questionnaires.php

Mimirlina. (2015). *Siglitun word circle: Ani* (S. R. Berthelin, Ed.). Retrieved April 30, 2020, from https://inuvialuktunstorie.wixsite.com/storiesandgrammar/siglitun-word-circle

Nagai, T. (2006). *Agentive and patientive verb bases in North Alaskan Inupiaq* (Ph.D. dissertation). University of Alaska Fairbanks. http://hdl.handle.net/11122/8897

Nouri-Hosseini, G. (2018). *Experimenting with picture-based methods for semantic fieldwork: A case study on quantity superlatives in Persian* (M.A. thesis). Göteborgs universitet [University of Gothenburg]. Gothenburg, Sweden. http://hdl.handle.net/2077/58149

Öhlschläger, G. (1989). *Zur Syntax und Semantik der Modalverben des Deutschen [on the syntax and semantics of German modal verbs]* (Vol. 144). Niemeyer Max Verlag.

Palmer, F. R. (2001). *Mood and modality* (Second Edition). Cambridge University Press.

Panigavluk, Mangilaluk, & Kavakłuk. (2015). *Uummarmiutun suffix circles: Viaq* (S. R. Berthelin, Ed.). Retrieved April 30, 2020, from https://inuvialuktunstorie.wixsite.com/storiesandgrammar/uummarmiutun-suffix-circles#comp-id1tbnu8bg

Panigavluk, Mangilaluk, Kavakłuk, Agnagullak, Suvvatchiaq, Mimirlina, & Siliuyaq. (2015). *Inuvialuktun stories and grammar* (S. R. Berthelin, Ed.). Retrieved April 30, 2020, from https://inuvialuktunstorie.wixsite.com/storiesandgrammar/

Peterson, T. (2018). Semantic and pragmatic fieldwork: Handout 2. Retrieved April 30, 2020, from http://www.public.asu.edu/~trpete13/CoLang2018/Handout_2.pdf CoLang 2018

ᐱᑭᕆᐊᒃ [Pirurvik Centre]. (N.d.). *About inuktitut*. Retrieved April 30, 2020, from https://tusaalanga.ca/aboutinuktitut

TFS Working Group. (2020). *Storyboards for language documentation*. Retrieved April 30, 2020, from http://totemfieldstoryboards.org/

Trondhjem, N. B. (2007). *Markering af tid i grønlandsk sprog med særlig fokus på fortid [the marking of time in Greenlandic with a special focus on the past]* (Ph.D. dissertation). Københavns Universitet [University of Copenhagen]. Copenhagen, Denmark.

Trondhjem, N. B. (2009). The marking of past time in Kalaallisut, the Greenlandic language. *Typological Studies in Language*, *86*:171–182.

van der Auwera, J., & Ammann, A. (2013). Overlap between situational and epistemic modal marking. In M. S. Dryer & M. Haspelmath (Eds.), *The world atlas of language structures online*. Max Planck Institute for Evolutionary Anthropology. https://wals.info/chapter/76

van der Auwera, J., & Plungian, V. A. (1998). Modality's semantic map. *Linguistic Typology*, *2*(1):79–124. https://www.degruyter.com/view/journals/lity/2/1/article-p79.xml

Vander Klok, J. (2012). *Tense, aspect, and modality in Paciran Javanese* (Ph.D. dissertation). McGill University. Montréal, QC.

Vander Klok, J. (2019). Exploring modality and temporality interactions through the storyboard Bill vs. the weather (L. Matthewson, S. Burton, & P. Littell, Eds.). *Semantic Fieldwork Methods*, *1*(1).