Semantic fieldwork from a distance with speakers of Akuzipik *

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Abstract: In this paper we describe semantic fieldwork undertaken from a distance with speakers of Akuzipik (also known as (Siberian) Yupik), an endangered Alaska Native language. We present our experiences in working both synchronously and asynchronously on temporal reference, quantification, lexical semantics of derivational morphology, and antipassives with speakers via Facebook Messenger, text message, email, mail, and telephone. We detail a number of logistical, methodological, and interpersonal challenges and benefits to conducting semantic fieldwork via these means both during the global pandemic and before/after. While fieldworkers have found the situation more challenging than in-person fieldwork in many ways, scheduling time with speakers is easier, and some speakers favor the extra time afforded them to think about their answers. Relationships among fieldworkers and speakers have benefitted from more extended interactions than are possible during in-person trips, and fieldworkers have been able to engage with speakers who had been unavailable during in-person visits.

Keywords: fieldwork from a distance, digital fieldwork, asynchronous fieldwork, Akuzipik, Yupik

1 Introduction

In this paper we present our experiences conducting semantic fieldwork on Akuzipik from a distance and through various channels before and during the COVID-19 pandemic. The work we describe includes research on temporal reference, quantification, lexical semantics of derivational morphology, and antipassives in Akuzipik. All of our fieldwork has been virtual since the beginning of the pandemic, but we have worked with speakers from a distance between our regular fieldwork visits since the beginning of our project. Here we discuss challenges that have arisen for fieldworkers and speakers and approaches we have taken to minimize these challenges. We also consider several unforeseen benefits to distance/digital fieldwork.

Akuzipik (ISO 639-3: ess) is an endangered language (EGIDS 7) of the Yupik branch of the Inuit-Yupik-Unangan language family. It is spoken by fewer than 1,000 people in the Bering Strait region: on St. Lawrence Island, Alaska; in Chukotka, Russia; and in mainland Alaska (generally individuals who have moved from St. Lawrence Island) (Schwartz et al. 2020). While the language is still used robustly in the adult population (born before 1990), younger Yupik individuals tend to speak English, often exclusively (Koonooka et al. 2021). This generational shift began in the 1950s

* The non-Yupik authors express special thanks to the Yupik speakers who have shared their language and culture with us, especially our co-author Ukaall Crystal Aningayou, and Apa Apangaluq, Shem Rose Koonooka, Christopher Petuwaq Koonooka, Channa Koozata, and Amaghalek Beulah Nowpokahok.
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In *Semantic Field Methods*,
Volume 4, Article 12, 2022.

in Russia and in the 1990s in Alaska (Schwartz et al. 2020), and the effects have been rapid and are evident to the Yupik community.

Akuzipik is a polysynthetic language with highly productive suffixing morphology (both derivational and inflectional) (de Reuse 1994). It employs ergative-absolutive alignment in its case system and displays relatively free word order (de Reuse 1994; Jacobson 2001; see also Hunt and Schreiner to appear). The work described here is part of a larger project to document the language, digitize existing materials, and create computer tools for Akuzipik speakers and researchers. A digital version (Hunt et al. 2019) of the existing dictionary (Badten et al. 2008) allows speakers to access the dictionary without owning a physical copy, and the digitization of existing literature and curricula in and on Akuzipik (Schwartz et al. 2021) makes these materials accessible to the speakers. The language's highly inflected forms can be challenging for non-speaker fieldworkers to manipulate; our team's morphological analyzers (Chen and Schwartz 2018; Schwartz et al. 2019; Chen et al. 2020) and digitized dictionary integrating one of these analyzers (Hunt et al. 2019) have helped fieldworkers bridge this gap.

In the scope of the larger project, the researchers have worked with a total of 44 speakers in Sivuqaq (Gambell, St. Lawrence Island, AK), and about 10 of these have returned for multiple sessions. Six of these individuals represent the speakers involved in the distance work described here. Of these speakers, one is in their 30s, three are in their mid 40s, one is in their 50s, and one is in their late 70s. Some speakers have an 8th grade education, others have a high school education, and one has a bachelor's degree. Some speakers are health aides or homemakers, one teaches Akuzipik at the high school level, and another teaches home economics with a bilingual curriculum at the middle and high school levels. All the speakers involved in the work described here are literate in the language (as are a large percentage of the speakers in general, including elders). The speakers we have ended up working with more frequently are particularly interested in the work. As might be expected, different speakers prefer certain tasks or methods, and we (the researchers) try to accommodate these preferences as we design our fieldwork.

For the work described here, no special equipment was required or purchased; speakers used their own personal cellular devices and computers to communicate via text, Facebook Messenger, email, and telephone. However, the researchers plan in the future to leave one or more recording devices and accompanying equipment in Sivuqaq to enable interested speakers to make recordings and undertake other documentation work independently of, and in collaboration with, the researchers.

While the ease of communication through established channels can be seen as a benefit of the distance methods described here, one drawback is that, with the exception of phone conversations, these methods depend on written communication in the language. As an anonymous reviewer rightly points out, this both precludes gathering data on any sound-sensitive phenomena and restricts the pool of speaker participants to those who feel comfortable writing in the language. Pairing written communication with phone conversations, when possible, can help capture auditory information not available through written channels. Researchers working with communities with lower levels of literacy in the target language may want or need to supplement phone conversations with other methods. An anonymous reviewer suggests a capacity-building solution for such an issue: interested speakers who are literate in the language could receive training to undertake interviews with non-literate speakers, even when researchers were not able to be present in the community. We plan to include such training in upcoming phases of this project.

In the rest of this paper, we first describe our methods in sections 2 (channels for distance fieldwork) and 3 (tasks in distance fieldwork); then in section 4 we discuss the topics we study and types

of data we collect via these means. In section 5 we detail other challenges and benefits related to distance fieldwork, and in section 6 we conclude and discuss a few practices from our virtual fieldwork that we intend to carry over to future endangered language research.

2 Distance fieldwork channels

In this section we discuss the different media through which we have conducted our recent distance-based fieldwork. In a typical year, some combination of members of our team travels to Sivuqaq (Gambell, St. Lawrence Island, Alaska) several times. While there, we undertake interviews for elicitation (one-on-one, two-on-one, one-on-two, two-on-two, etc.), we record some speakers reading written Akuzipik for later use in educational materials such as read-along e-books, we scan items for digitization, and we pilot tools with speakers. Generally, we do some follow-up work via email or Facebook Messenger between in-person trips. During the pandemic, we have continued to work with several of our established speakers (and one new speaker), exclusively from a distance.

The speakers' individual circumstances have dictated speaker-fieldworker interactions. Most people in Sivuqaq have smart phones, but many do not have computers (or prefer to communicate via their phones even if they do have a computer). High-speed internet access and cellular internet access are available but extremely unreliable, making video conferencing next to impossible for most speakers. Telephone conversations are possible but often suffer from poor connectivity (both cellular and land lines). Texting is possible, and some speakers have preferred it; however, some speakers incur fees on their mobile plans for texting and prefer to avoid it. One speaker prefers Facebook Messenger over texting because their phone is not able to send messages over a certain length. The most consistently reliable method for the speakers we have been working with has been Facebook Messenger; this is the medium via which much of our recent work has been undertaken. With some speakers we also exchange emails or letters. Each of these channels is discussed in more detail below.

Below we also discuss questions of information load. It is of course necessary in all elicitation settings to determine how much material to present to the speaker within each session; however, this problem becomes more conspicuous when working via the media described here, as less feedback is available about the amount of information flowing between fieldworker and speaker. In each elicitation situation we have engaged in, it has taken some time to discover the most convenient and usable amount of material to send to the speaker each time. This depends on the type of inquiry, the question being asked, the medium, and the individual speaker's needs. In all cases, the fieldworker and speaker work together to determine how best to undertake the work, including the medium and method of data collection, but also the precise direction of the research.

2.1 Phone conversations

Sessions conducted via phone typically also involve a considerable degree of messaging (via text message or Facebook Messenger). Situations and context are described over the phone; Akuzipik words or sentences can also be conveyed this way. In the research we have conducted over the phone to date, the accompanying questions about Akuzipik forms or sentences are typically sent via message and the responses from speakers are returned in kind. This is to avoid any misunderstandings due to researcher pronunciation errors, etc., and to ensure that the researcher has the intended spelling of the Akuzipik. It should be noted, however, that for speakers who are not literate in the

target language or do not have access to messaging applications, the entirety of the session could be conducted via telephone. Any clarifying or follow-up questions concerning the responses are asked over the phone; this sometimes leads to additional message exchanges or a simple oral response from speakers.

Fieldwork sessions conducted via phone typically last an hour and the quantity of information shared and received varies depending on the topic discussed. This is perhaps one of the primary benefits to working via phone plus text. This methodology encourages, even necessitates, that questions be asked one by one, then discussed to the extent desired by the fieldworker and/or speaker before continuing. Speakers are less likely to be overwhelmed by information overload, which can occur in asynchronous fieldwork channels, since they facilitate the asking of many questions at once. Phone conversations also permit speaker and fieldworker to periodically "check in" with one another during a session, particularly in regard to fatigue, and having these opportunities to express care and concern is invaluable for building rapport between individuals.

Another benefit to the phone plus text sessions is the additional conduit for information provided by text, especially when either participant misspells a word in Akuzipik or uses a variant the other is unfamiliar with. The phone plus text methodology produces a written record of the error and correction, which can be referenced later and can be especially useful if the "misspelling" happens to be a variant spelling instead (see Figure 1).

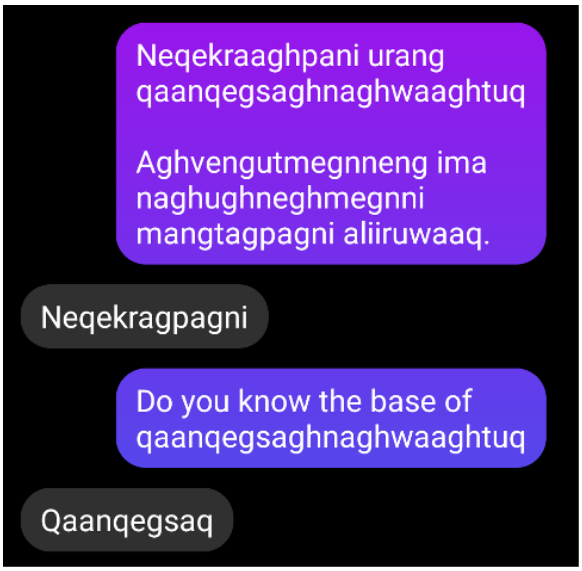


Figure 1: Misspelling correction and follow-up question

Keeping a record of one's data and speaker responses is also fairly straightforward during phone plus text fieldwork sessions, as it can be done during the session itself. Chen prefers to keep all records digital and typically prepares a tsv and/or plain text file ahead of a scheduled session that lists all of the questions she wishes to ask. During the session itself, she keeps these files open on her laptop, and as the speaker responds, via phone or text, types and saves the response in the desired file. If one prefers paper and pencil, one can certainly handwrite the response and reference it later during formal archiving.

Of the methods described here, conducting distance fieldwork via phone is perhaps the method-

ology most analogous to on-site, in-person fieldwork. As with on-site fieldwork, follow-up questions can be asked immediately (see Figure 1), as they occur to the fieldworker, and speakers can also request immediate clarification to a question or task that has not been presented clearly (see Figure 2). Unlike asynchronous fieldwork channels which are primarily written, phone conversations mitigate the guesswork with respect to what the other might be asking or saying. And while speaker and fieldworker still lack visual cues for communication, at minimum they can utilize verbal cues to express comprehension, confusion, or care.

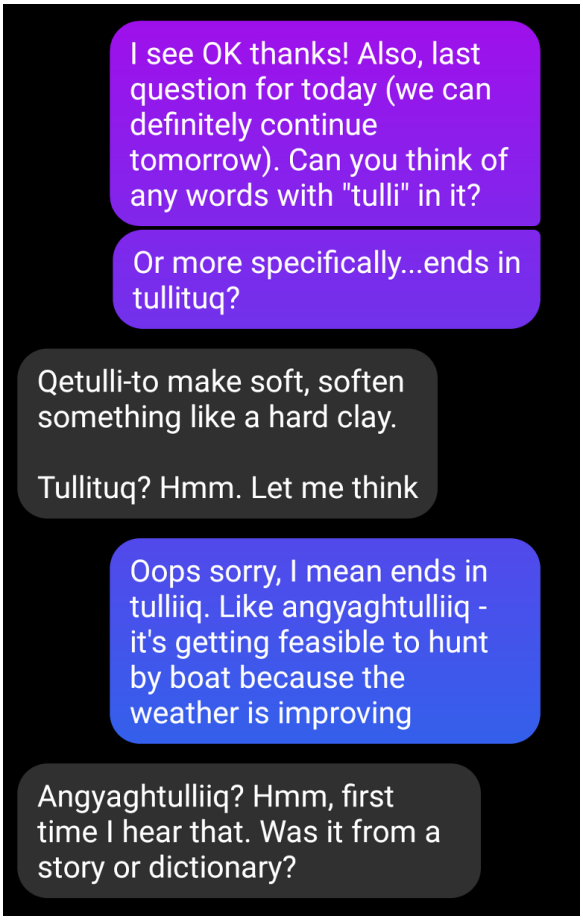


Figure 2: Task clarification

Working via telephone nevertheless comes with its own set of challenges. Although in many ways it is like an in-person meeting, there can be issues of background noise, distractions, and connectivity on both ends. It is not uncommon for Yupik individuals to live in multigenerational households, and (for example) one speaker frequently looks after their nephews in the daytime. As a result, background noise is an inevitability, but speakers themselves are aware of this issue and do their best to minimize its impact.

In comparison, poor phone reception and service is far more problematic and frequently results in dropped calls, delayed texts, and in the worst case, inability to reach one another by phone at all. There are also times when speakers cannot call and text simultaneously and must hang up in order to receive text messages sent by the fieldworker. As a result, many phone plus text sessions end up

migrating to Facebook Messenger (which offers both call and written chat features).

2.2 Email and mail

Some speakers have preferred working at least partially via email or conventional mail. Sessions conducted via email involve sending situations and context with accompanying questions about Akuzipik forms, or requests for translation or generation of Akuzipik forms, either in an attached Word document or inline in an email. In this way, speakers can see all the questions at once and reply in the manner they see fit. Speakers can respond inline in an email or edit the Word document and return it. In some cases, speakers send responses via text message or Facebook Messenger—at least one speaker did not favor email as a medium for response because it was easier for them to type out answers on their phone than on a computer. Text and messaging applications are also useful for asking quick clarification questions about the material sent via email.

Working via email may be easier for some speakers since they are easily able to refer back to the Word document or email to find the questions if they need to look at them again. This can also be more convenient for the fieldworker than working entirely via Facebook Messenger, since multiple questions can be included in one Word document. Speakers may also find it more convenient to have a single document to work from at their own pace. Some speakers, however, may prefer a smaller ratio of information-per-communication, such as that provided by a messaging application. If a lower information load is desired but email is the preferred medium, the researcher can simply send less material with each email/attached document. It should be emphasized that speakers should not be expected to speak up when they find the frequency of communication, or the information load, to be too high—the fieldworker should make sure to explicitly check in about this when work begins, and then regularly throughout any continued communication.

One speaker has preferred mailing written correspondence for longer questions. With this speaker, we use text messaging to keep in touch and ask short questions (brief grammaticality judgments, etc.). For a translation of a story, and for a series of questions including a number of grammaticality judgments with contexts, as well as some questions about impressions of language use, etc. in the community, we mailed the speaker the typed documents, and they wrote out their answers by hand and mailed them to us. Using the mail means we can also send along a hand-written note, pads of paper to write on, and extra pencils (since supplies can be hard to come by and expensive in the community), etc. We also send participant payments via check this way.

For speakers who return annotated Word documents via email, those documents can be archived directly or, depending on the nature of the data involved, the data can be transferred to a spreadsheet and saved as an archivable tsv file (see the Appendix for examples). Data collected via email is transferred into an archivable Word, txt, or tsv file (depending on the needs of the project and the data). For instance, in cases where contexts and sentences are provided, and the speaker provides a grammaticality or felicity judgment, these sentence-judgment pairs are typically transferred to a spreadsheet. Contexts for judgments are kept alongside the sentence in question in the spreadsheet. Longer texts or narratives, on the other hand, are transferred to and archived as Word or plain text (txt) files. Judgments, sentences, and narratives returned by conventional mail are treated the same way but scanned and typed first. We are currently scanning (and will be archiving) hand-written documents as images, though we hope to undertake Optical Character Recognition on these documents in the future in order to yield searchable PDFs.

For the purposes of paying participants, "sessions" conducted via email or conventional mail are

timed by the speaker. The speaker keeps track of how much time they spend answering the prompts and tells the researcher when the work is complete.

2.3 Texting and messaging

Sessions conducted via text message or Facebook Messenger usually begin (after warm-up/small talk) with the fieldworker sending instructions or a discourse context, followed by a numbered list of questions or forms. Some speakers prefer to receive one question or form at a time. Others do not mind more, with one speaker having received 30 sentences for translation in a single session once. These were exceptional circumstances, however, as all 30 sentences originated from the same narrative to assist the speaker with their translation. Most sessions typically consist of 5 to 10 questions. We have found that synchronous sessions, or asynchronous sessions with smaller chunks of data exchanged, yield better results, although asynchronous sessions can suffer from issues of latency between inquiry and reply on both ends.

In a visual elicitation task undertaken by Hunt, the nature of the task meant that sending more than one picture at a time might have caused confusion for either party or caused mismatches in referents. For this task, a single picture was sent and its related elicitations and discussion were completed before the next picture was presented to the speaker. Some elicitation sessions turned asynchronous, which resulted in an extended period of time between the sending of the initial image and the end of its related discussion. In these cases, the record provided by the message thread proved very useful, as the speaker was able to easily refer back to the appropriate image and pick up the discussion where it ended.

The relative informality of messaging has also allowed us to replicate to a great extent the ease and feel of an in-person conversation. The intimacy and familiarity of texting helps to foster a more informal and less stressful atmosphere for the elicitations. For some speakers, the informal setting offered by texting/messaging was reflected in a shift in register in the metalanguage. For at least one speaker, communication in the metalanguage during discussion portions of the sessions was noticeably more relaxed and casual than in previous in-person sessions.

For sessions conducted via message, some issues have arisen from the inability to customize messages. In both text messages and Facebook Messenger, no formatting other than simple numbering (and use of characters such as * for emphasis) is available—for instance, to distinguish between supporting examples or context and a sentence or wordform under examination. Even numbering the input can create a problem when trying to ask follow-up questions, since the speaker can either be overwhelmed by the embeddedness of the numbering or can lose sight of the connection between two forms since they are given as disconnected from one another numerically. It can still be useful, however; for instance, in Figure 3 numbering helped the speaker recognize that there were two questions that needed answers. Numbering also helps on the fieldworker's end. One benefit of using Word documents via email, or even emails themselves, is the ability to format elicitation "sessions" in a more user-friendly way (with numbering, bullet points, italics or bold face for emphasis, etc.; see the Appendix for an example). However, email has the possible disadvantage of encouraging the fieldworker to send too much information at once.

Other issues have arisen around the lack of ability to organize the data, especially when the questions being asked explore a variety of topics and linguistic phenomena. With intentional planning and forewarning directed at the speaker, however, this issue can more or less be circumvented by grouping questions by topic and sending each topic as a separate text or Facebook message. Com-

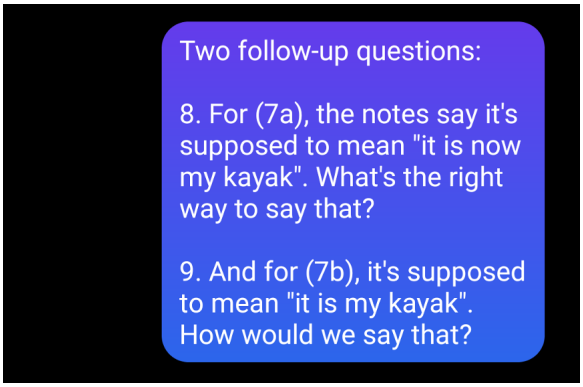


Figure 3: Numbering input

partmentalizing the questions is beneficial for the speaker as well, as it allows them to attend to one topic, that is, one message, at a time before tackling the next. In this way, a variety of phenomena can be investigated in one messaging session. With multiple messages, issues will still arise when a speaker does not notice some of the questions that had been sent or has to scroll back up to find a question before answering it.

Speakers and fieldworkers both have also lost or forgotten messages, having them either be pushed up in the thread of messages, or not sent at all due to length or technical mishap. With older devices especially, long text messages may be split up and sent individually based on their size (often into 160-character chunks). Thus, a long message can be split easily into 5 or 6 messages, sometimes arriving out of order, making tracking one idea to another a challenge. This issue does not arise with Facebook Messenger. In both types of messaging situation, however, it can be difficult to keep track of extended scenarios or contexts—repeating of the context/situation (and the question at hand) is often necessary. On the other hand, it is also possible to scroll up in a list of messages to re-read directions or a response as needed, without having to check with the other person.

Depending on the messaging service used, “reactions” such as emoji or “likes” can be used to direct the speaker’s or researcher’s attention to a particular message, as long as their meaning is established between the two parties before they are used. Most messaging services allow users to long-press on a particular message bubble and select one of these reactions, even if the message is multiple days back in the thread. This annotation will appear to the other user as a small, subscripted image on the message bubble in question. This strategy can help mitigate confusion regarding which message is being referenced in a follow-up or clarification question.

Sending reference images or other media via text or Facebook Messenger can be cumbersome but is at least a possibility. Ideally, high quality images should be used, especially if speakers are generally using mobile devices to view stimuli and respond to elicitation prompts. Currently, many commonly used mobile devices have relatively small displays, and the speaker will likely prefer to open the image in full-screen mode or at least zoom in for better viewing. Low quality images can quickly become indistinguishable when expanded and render the stimuli ineffective or in some cases, useless. However, high quality images can significantly increase data usage when downloaded, so researchers should be aware of their participants data usage constraints, so they are not exhausted through the elicitation session. Facebook Messenger also allows users to send voice messages if there are questions of pronunciation, etc., although this can work less well at lower bandwidths (see

also Sanker et al.'s 2021 recommendation against Facebook as a medium for recording language data).

Haas conducted elicitations on the Akuzipik antipassive with one speaker via text messaging. An initially chunk-based approach was later abandoned for a more streamlined dialog. During the earlier sessions, up to 9 forms/sentences would be presented at a time; then, two additional subquestions/forms that adjusted the morphology, syntactic structure, or semantics would accompany each of the main forms, and the speaker was asked for acceptability/grammaticality judgments. This approach sufficed at first, but with more complex constructions, often with quite detailed arguments and scenarios, it proved better to take a more organic approach to texting that relied more heavily on the input of the speaker, creating discourse contexts and forms together.

As with elicitations conducted via email or conventional mail, data collected via message is transferred to an archivable format immediately following the session—either a Word document, a text file, or a spreadsheet, depending on the type of data. Archiving a feed of texts itself, for instance, is difficult; the researchers frequently save screenshots of the conversations for possible future reference but build spreadsheets with forms/sentences, interlinear glossing, translations, contexts, notes, and appropriately blinded metadata as the main record of the work (see the Appendix for an example). One issue with using Messenger or other online channels is data security. Some messaging apps such as WhatsApp provide end-to-end encryption, ensuring (as far as possible) privacy and data security. For the time being we have used Messenger because it is preferred by our speakers, but moving to WhatsApp or another end-to-end encrypted app would be an improvement in terms of data security in the future.

Sessions conducted via (text) message can be simple to time for the purposes of paying participants; when the session is complete, the researcher can consult the time stamps on the messages even if the time was not noted at the outset. In the case of fully asynchronous sessions, as with work done by email or conventional mail, the speaker can keep track of how long they spend working on their responses and report it to the researcher. When sessions are partially synchronous, timing can be more of a challenge. In these cases, we have discussed with the speaker about how to go about keeping track of time. Typically, the researcher will keep track of any synchronous work using the time stamps from the messaging application (adding up several smaller amounts of time), and the speaker will keep track of and report any time spent working outside of these synchronous sessions.

More specifics regarding the outcomes of these fieldwork methodologies will be presented in section 4. In the next section, we discuss some of the tasks undertaken during this distance fieldwork, and the methods used to engage in those tasks.

3 Tasks and methods

In this section we discuss the specifics of tasks that we have engaged in via the channels described in section 2.

3.1 Truth value and felicity judgments

Truth value and felicity judgments typically require a good amount of context. In investigating past-referring morphemes, for instance, Schreiner first establishes a scenario with the speaker, and then asks for felicity or truth-value judgments. Sometimes, a word form or sentence is checked without context for acceptability/grammaticality first, and then used as part of the rest of the elicitation.

Contexts are typically provided in English, to avoid priming in Akuzipik (and for more control over the context, given the researcher's low level of skill in speaking and writing Akuzipik). A fairly detailed context is required for each judgment, so in order to facilitate stimuli creation and make the judgments more naturalistic, an overall setting or scenario is established first. Then, within the setting, different contexts can be set up. In pursuing questions about past-referring morphemes, Schreiner has used, for example, a setting involving a gathering where plates of food were being made for others, and another where someone was thought to have taken a boat.

How these contexts and accompanying sentences for judgment are conveyed depends on the medium. When using email, the larger setting, smaller contexts, and individual sentences for judgment are sent in the same document, in order. The speaker can then read the document from beginning to end, answering questions as they go. When working via message or text, the researcher first establishes the scenario, then sets up more focused contexts and asks accompanying questions as the session progresses—in a rhythm more like an in-person elicitation.

Eliciting truth value and felicity judgments is particularly difficult via any sort of textual means, since it is more difficult to get at and discuss minute semantic differences in a conversation that is either one-way-at-a-time or may have delays, etc. Detailed contexts and follow-up questions help with this. Another issue with this type of judgment, as with acceptability judgments, via textual means is the lack of phonological and intonational information. It is advisable to do at least part of such elicitations via telephone (or Zoom, etc., when possible) to help make up for this deficit.

Despite these potential drawbacks, a benefit was noted by one speaker (Aningayou): in work conducted via email in particular, or via message or text in a setting where asynchrony was acceptable or expected, the speaker felt that she had extra time to think about the sentences or scenarios. On several occasions, the speaker thought of other scenarios to complement the one(s) offered by the researcher, or thought of other answers, while engaged in regular day-to-day activities, and was able to make note of these before responding.

3.2 Acceptability (grammaticality) + felicity judgments

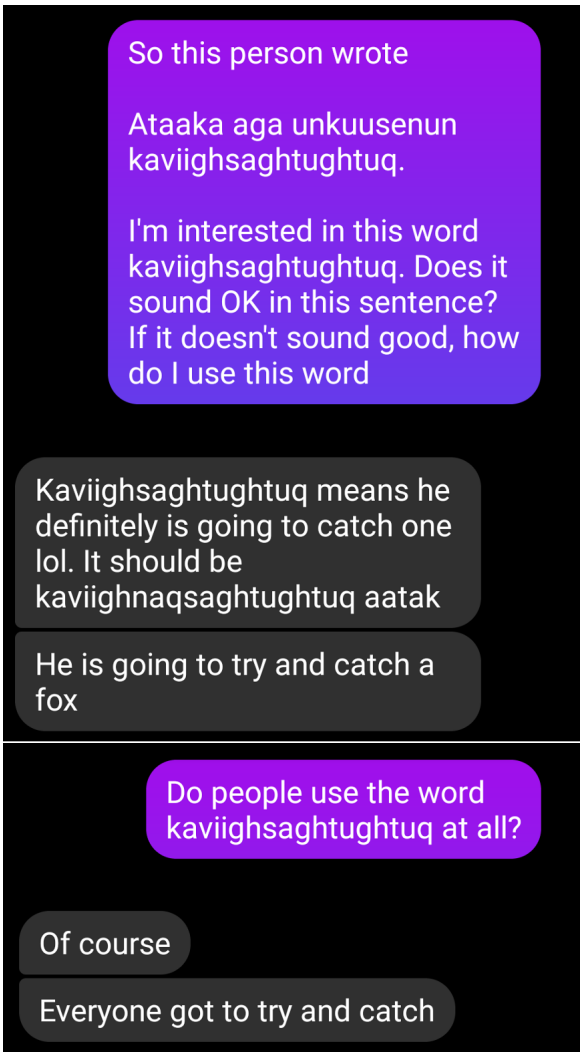
A considerable amount of our distance fieldwork has involved gathering acceptability judgments with respect to individual words and sentences. Some of Schreiner's work on temporal reference has involved acceptability judgments, as has Haas's work on antipassives. Here we more closely describe the combined judgment tasks undertaken by Chen in her work on documenting the lexical semantics and distributional patterns of derivational morphemes in the language.

The words being investigated are either listed in the Badten et al. (2008) Akuzipik-English dictionary or constructed by the fieldworker herself. The sentences being investigated are extracted from transcribed oral narratives or elicited from speakers themselves. For sentences, speakers are simply asked to translate each one into English and to share any thoughts regarding word choice, sentence structure, pragmatics, etc. A sample set of instructions and sentences is given below:

> For the next ones, same as last time—if they sound good to you, could you provide a translation? If they don't sound good, if you can see why (word spelled wrong, or impolite, or sounds like a young person saying something wrong), you could tell me that.
> 1. Uyughaqa alingtalasughnaaqaat qepghamun mamlegmi pinighnayukan. […]

If a speaker provides a straightforward English translation and/or explicitly expresses their approval, the sentence is presumed to have been judged as acceptable. When speakers rephrase a sentence or struggle to produce a translation, they are encouraged to add what they intuitively perceive

as “wrong” about the sentence. Follow-up conversations often assist in identifying and clarifying these perceptions as well, as seen in Figure 5. Initial conversations with this speaker suggested the sentence in question was intelligible but required rephrasing. It was later conversations that suggested that the rephrasing was desired for pragmatic reasons.



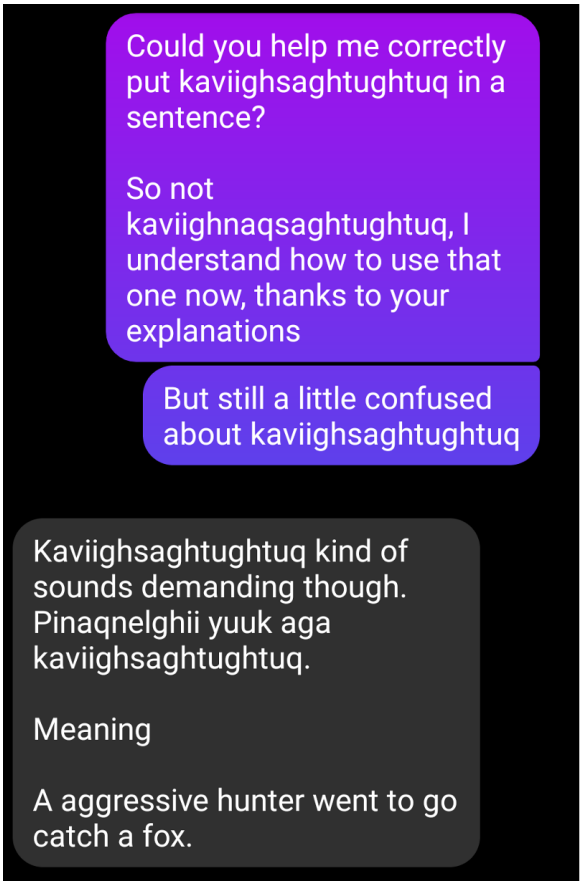


Figure 4: Immediate follow-up

The ways in which acceptability judgments are elicited for individual words vary from speaker to speaker but fall under two approaches: direct versus indirect. The direct approach involves simply asking speakers *What does [word] mean?* and is sometimes rephrased as *Have you heard [word] before? If so, can you tell me what it means?* This ensured the speaker had not been primed to believe that the form being presented was necessarily a good Akuzipik word, especially if it had been constructed by the fieldworker themselves. In contrast, the indirect approach typically involves establishing context for the word(s) being investigated, of which an example prompt is given below:

> I've learned that there are a lot of different ways to describe something as "small" in Yupik, and I'm curious if there are any differences. For example, my understanding is that all of the words in (a)-(f) mean "small child". If you saw one of [name]'s pictures of her daughter on Facebook, could you use all of these words to describe her daughter?
> a. taghnughhaghhaq
> b. taghnughhangestaq, taghnughhangeltaq, taghnughhangertaq […]

Speakers often find one approach preferable to the other. An older speaker frequently rejected words presented via the direct approach, but later accepted them when they were given background and context. Even sending images of their dictionary entries did little to facilitate the direct approach. For another speaker, the indirect approach often results in confusion, making them wonder what exactly is being asked of them.

From a distance, gathering acceptability judgments for words and sentences has been equally challenging, especially given the polysynthetic nature of Akuzipik and the interplay of syntax and semantics even at the word level. The challenges of these tasks are slightly ameliorated if a speaker is especially forthcoming in their responses, but some speakers tend to send more concise responses, which can be tricky from the fieldworker's perspective especially when words or sentences are perceived as "wrong". While follow-up conversations via text can certainly compensate for the conciseness of the original response, these conversations are perhaps better suited for synchronous conversations by phone. This, however, is then dependent on the compatibility of the speaker and fieldworker's schedules.

3.3 Eliciting lexical forms and semi-naturalistic contexts

For Hunt's work on nominal quantification, elicitation involved a series of visualizations of semantic spaces that were sent to the speaker through Facebook Messenger. Examples of such visualizations are given below in Figure 5.

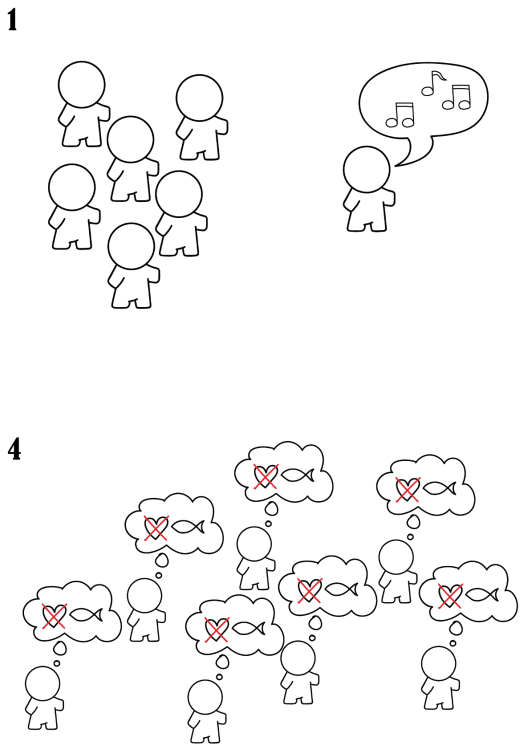


Figure 5: Visualizations 1 and 4

The first image in Figure 5 was designed to approximate quantificational meanings similar to those in English denoted by "only one", "most", "not all", "almost all", etc. The second image in Figure 5 targets the contrast between "all" and "none" but could also elicit something like "every" or "not one". The images are intentionally broad in their coverage of semantic spaces to allow flexibility in the speaker's response.

Generally, the exchange began with some introduction to the nature of the task. The images in Figure 6 illustrate the initial dialogue with the speaker and the beginning of the first visualization discussion.

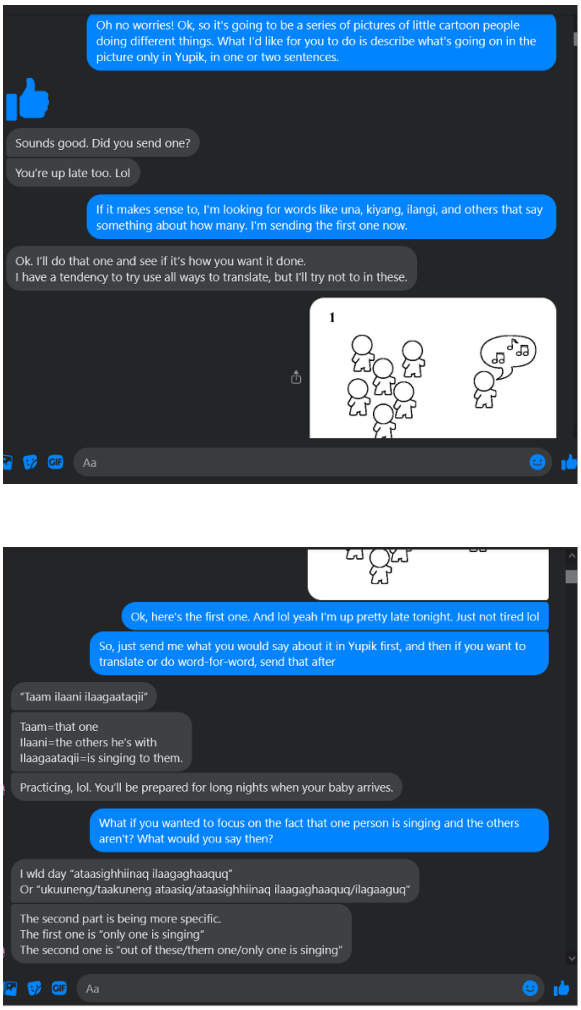


Figure 6: Initial discussion of images

Following this, the speaker would reply with a description of the scenario depicted, hopefully using a desired nominal quantifier somewhere in the reply, and a discussion of its content ensued. As the visualizations were designed to be polysemous, inspiring a variety of possible responses, speakers often replied with multiple viable interpretations of the visualization, each of which could be, and often was, the subject of an extended discussion on usage of particular words or wordforms conducted in the same Messenger thread. When the investigator felt that the provided descriptions had been adequately explored, or that the speaker seemed ready to move on, the next visualization was sent and the process began again. After each session, the thread was copied to a more permanent medium (usually a Word document) for archiving purposes. Sessions usually lasted 2-4 hours with a couple of short breaks and could sometimes be longer if the discussion turned asynchronous, to accommodate events in the speaker's schedule.

Much of the interaction between the speaker and researcher was informal and tended to be in the form of a stream of consciousness. This proved to be difficult to manage at times, when both individuals would send overlapping messages addressing one or another part of a previous message but gloss over some relevant question or fact. Most of the time, this was easily addressed by simply restating the question or directing the reader to a previous message either explicitly or through the "reaction" method mentioned previously. In this way, having a real-time record of the conversation for rapid reference or clarification proved invaluable.

Some elements of this work would no doubt have been more effective or required less effort on the part of the fieldworker had it been conducted in person. In particular, referencing specific parts of the visualization requires more explicit language than it would in person, where one would likely just point. This proved to be particularly problematic in situations in which the fieldworker wanted to avoid describing portions of the visualization in English in order to mitigate the effect of "meta-language influence" (as described in Matthewson 2004). This effect has been suggested to prime elicited responses and alter word order and lexical choice to reflect the meta-language—in this case, English. (See Harris and Vogelin 1953 and Gerdts and Hukari 2003 for more on meta-language influence in elicitation). In most cases, the fieldworker had to resort to using English to "talk around" the problem words to describe a particular focus point in the visualization. An example of such an interaction is shown in Figure 7.

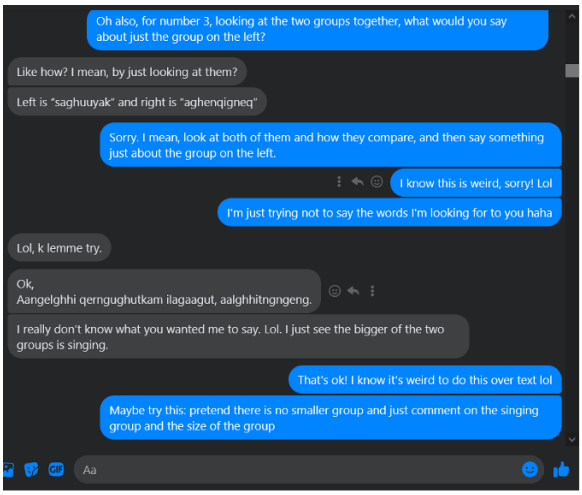


Figure 7: Eliciting image descriptions with quantifiers

Additionally, individual sessions using Facebook Messenger proved to be much longer in general than a standard in-person elicitation session, often exceeding 3 hours of nearly constant attention to the feed. Despite these extended sessions, in most cases, the time required to type out each message and wait for a response reduced the number of visualizations that were addressed in each session. Most sessions were able to cover three or four visualizations over that period, whereas an in-person elicitation session may have been able to address six or seven in the same period. The resulting extended sessions with sparse information return meant more sessions were necessary than might have been needed with in-person meetings.

In Schreiner's work on temporal contrasts, another type of elicitation task has been employed. The researcher gives the speaker a list of words known to be acceptable that include a morpheme of

interest (or contrast with another word that does). The speaker is then asked to provide a context in Akuzipik where the speaker might use that word (and then translate the result to English). This task has the benefit of targeting particular forms while also yielding more naturalistic, speaker-created sentences to contextualize them. The task must be preceded by work with the same or other speakers to confirm the acceptability of the forms in question, but the resulting sentences can then be used to create input for truth value or felicity judgment tasks with other speakers.

In the next section, we discuss some of the research undertaken using the channels and methods described above.

4 Semantic fieldwork on Akuzipik

In this subsection we briefly describe the first four authors' areas of focus during the time period under consideration, as illustration of the methods we have been discussing.

4.1 Temporal reference

Schreiner's work in the period described in this article has focused on the contrast between two non-obligatory markers of past time, *-(i/u)ma* and *-(g)kaa*. Neither is required for the expression of past time semantics, as unmarked eventive verbs are generally interpreted as referring to the past. In previous work, both *-(i/u)ma* and *-(g)kaa* have been glossed as "past", and translations use English simple past or present (or sometimes past) perfect; authors provide similar definitions for both (reflecting a past or present perfect type of meaning). One author claims that *-(g)kaa* is used for "shared historical knowledge for which the speaker need not take total responsibility" while *(i/u)ma* "means that the speaker takes some responsibility for the past event reported, regardless of whether it was actually witnessed by him" (de Reuse 1994: 168). These descriptions do not seem to hold completely true in the data Schreiner has gathered. Instead, *-(i/u)ma* is used to describe "closer" past events (in terms not only of time, but of path of knowledge, etc.) while *-(g)kaa* is used in situations where the speaker considers themselves "further away" from the event in one or more of these terms. Documenting this distinction is important for a building a complete picture of the grammar of Akuzipik and of temporal and related contrasts cross-linguistically. Subtle contrasts such as these (particularly in morphemes that are non-obligatory and not high-frequency) are also at greater danger for attrition in partially-fluent speakers.

Work on these temporal contrasts has been conducted with two speakers, via email and Facebook Messenger, and consisted of both judgments (mostly felicity judgments, with some truth value and acceptability judgments) and the elicitation of sentences involving target forms. For judgment tasks, the researcher typically sends a fairly detailed context or situation (in English) to the speaker in a Word document via email, or via Facebook Messenger (see Figure 8), along with a description of the task. Speakers respond via email or Facebook Messenger, and often ask follow-up questions or give further comments via Messenger. For sentence elicitation tasks, the same means are used to send a detailed description of the task along with the list of target words.

4.2 Quantifiers

Hunt's work has been the documentation of quantifiers and other modifiers, most recently focusing on cataloguing and describing the distributional characteristics of simplex nominal quantifiers

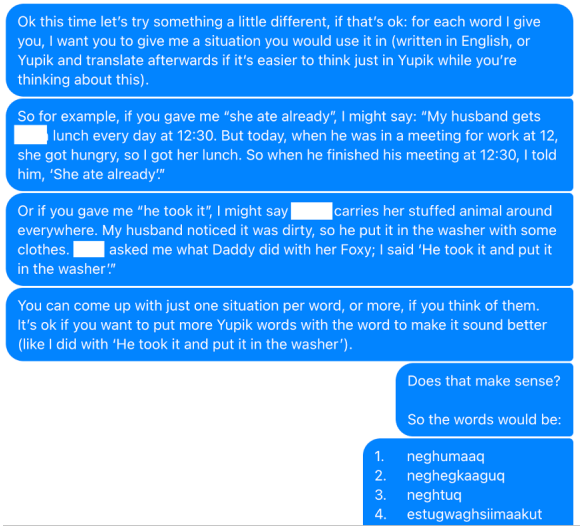


Figure 8: Eliciting contexts that include target words

in Akuzipik. This work was carried out with one speaker, via Facebook Messenger, as described in section 3.3. These lexical items have been largely neglected in previous work, which have offered sparse syntactic and semantic characterizations of nominal quantification. Previous accounts include preliminary descriptive work by de Reuse (1994) on the ordering of nominal elements such as demonstratives and nominal possessors, as well as Jacobson's (2001) description of the so-called "Quantifier-qualifier" construction (Jacobson 2001: 76) and a short list of verbal quantifiers which include one root "*tamaghhagh-* 'all, every, both (for dual)'" which was further shown to also quantify nominals.

The goal of Hunt's work on nominal quantification is primarily descriptive, though certain typological questions can also be addressed through a description of nominal elements (for example, phrase-internal head-ordering, co-occurrence restrictions, and agreement). Foundational to the description of nominal quantificational elements in Akuzipik is the exhaustive identification of the forms of these elements, which Hunt's work addresses through the use of elicitation techniques using visualizations of quantificational semantic spaces (as discussed in sections 2 and 3). Generally, this work parallels investigative treatments of other related languages, such as Bittner's (1995) work on West Greenlandic nominal and verbal quantification, in its prioritization of descriptive groundwork to facilitate theoretical analysis.

4.3 Lexical Semantics of Akuzipik Derivational Morphemes

Chen has focused on the lexical semantics of derivational morphology, studying in turn each of the approximately 600 derivational morphemes that are recorded in Badten et al.'s (2008) Akuzipik-English dictionary. Chen's work is intended to be an eventual reference for those developing pedagogical materials for language learning; therefore, much of her data collection has focused on (1) the productivity of each derivational morpheme, (2) the degree to which each morpheme accords with its current dictionary definition, and (3) the interchangeability of seemingly synonymous morphemes. With respect to the productivity of the morphemes, Chen has studied whether each morpheme can be used freely with any and all roots or if they are limited in some capacity (e.g., semantic reasons, clan

or personal preference, or language change over time). Chen is also collecting information for the eventual update of dictionary definitions where necessary, particularly for those morpheme entries with multiple definitions, as some tend to be more salient to speakers than others. There are also entries with missing subdefinitions and those whose definitions do not fully align with their usage by speakers today. Lastly, Chen is attempting to determine whether there exist any distinctions between apparently synonymous morphemes that have not been previously documented. Some suffixes are listed in the dictionary with multiple definitions, but some subdefinitions appear to be more salient than their counterparts (e.g., *-liigh* 'to fix N; to make N; to cook N; to prepare N'—the latter two seem to be more salient for this suffix). Sometimes a subdefinition is missing from the dictionary altogether (as in the case of *-naqe* 'one who tries to V'). Other times, the given definition seems inaccurate (e.g. *-msiigh* 'something like N', which was interpreted by all speakers consulted as a dishonorific meaning something akin to "annoying N").

Chen's fieldwork has consisted primarily of gathering acceptability and felicity judgments, as discussed in Section 3.2, and has largely been successful after elicitation methods were adapted to each individual speaker, e.g. some speakers require more background and context than others. Already Chen has compiled a rich inventory of lexical information pertaining to each derivational morpheme as well as multiple examples of their usage, more than is given in the Akuzipik-English dictionary and in Akuzipik literature elsewhere.

Nevertheless, one must acknowledge that there are limitations to this work that are in part exacerbated by distance. Many fieldwork sessions, whether via phone plus text or via text alone, have targeted one or two specific morphemes, which have been valuable for understanding the fundamentals of the morphemes themselves with respect to meaning and usage. There are times, however, when the discussions and especially the example usages elicited from speakers can feel unnatural and contrived, since they are not moored to any greater context. When in-person, speakers often referenced the space around them while giving examples, pointing to objects or describing events the fieldworker would experience during their stay. When these descriptions are shared over the phone or via text, they are still valued but, in some ways, feel less natural and intuitive. Depending on the speaker, they may not even be shared at all unless prompted.

4.4 The Antipassive

Haas's work has focused on the semantic implications of the antipassive (termed 'half-transitive' by earlier linguists) in Akuzipik. Authors have found that the contexts involved in this alternation cross-linguistically include scenarios with non-specific (Manga 1996) or indefinite (Mithun 1994; Jacobson 2001) objects, and aspectual distinctions such as the imperfect/progressive (Bittner 1987) and inceptive/inchoative (Siegel 1997; Spreng 2001). Others find that the alternation occurs in the context of a new referent in the discourse (Kalmar 1977) or even from scope incongruencies between the two voice types (Bitner 1987). This points to the benefit of including semantic and pragmatic/discourse aspects in any study of the antipassive construction in Akuzipik. Also of interest is the overlap between the morpheme *-i*'s antipassivizing capacity and its ability to serve as an adversative or malefactive marker. Uncovering the conditions surrounding this morpheme's usage is crucial for thorough documentation and analysis of the syntax-semantics interface in Akuzipik.

Haas's research began with a study of the digital corpus of Akuzipik (Schwartz et al. 2021). This corpus-based work did not easily lend itself to extracting the desired semantic information, but was useful for beginning to construct semantic, pragmatic, and syntactic contexts for later (virtual)

elicitation sessions. However, the numerous forms drawn from the corpus, while serving as a useful starting point, quickly overwhelmed the elicitation: Using pre-generated forms made it difficult to supply the intricate and specific discourse contexts required for testing hypotheses about the antipassive and adversative in Akuzipik. For example, it was difficult to pin down differences in the specificity of the object in antipassive versus non-antipassive sentences. Instead, having a dialogue about scenarios when the antipassive would be preferred made several things clear: novel objects (those either new to the discourse context or those new entirely to the speaker, i.e. never seen before) are more common in antipassive structures; a definiteness restriction does exist (antipassive objects cannot be definite); the antipassive is occasionally used to nominalize clauses; antipassive stacking may exist (more exploration to be done); and the adversative reading was never accepted.

As it stands, relying on speaker-generated forms informed by a mutual analysis has yielded the best output in terms of both data and speaker-fieldworker interaction. Using translations of corpus data is a useful method of initiating and prolonging remote dialogue but letting context and the speaker's insight lead the dialogue has led to better-quality (and in some cases novel) data.

5 Other challenges and benefits

5.1 Data-gathering

A few challenges have presented themselves in relation to the gathering of data via these means. When we work in person, we are able to explain elicitation tasks in an individualized way depending on the speaker we are working with. If the request is not clear to the speaker, we can continue with a more detailed explanation. Working via distance media makes this process both more drawn out and more fraught in general, since it is less clear to the fieldworker when the task is not clear to the speaker. In many cases the only way to reliably gauge the speaker's understanding is to ask them explicitly. This method can present challenges, however, if the speaker is not comfortable expressing their confusion or if a rapport has not been sufficiently established to encourage them to do so. The speakers involved in the distance work described here were all individuals who had already worked with members of the team in person, with one exception; this individual had interacted in person with members of the team but had not yet participated in elicitation sessions. We suspect that initiating distance work between researchers and speakers who have not met in person would be much more challenging. Initial work via a video platform or at least telephone would be preferable if such a thing were to be attempted.

Guidance of fieldworkers with less experience is also more of a challenge when we are all working from separate locations. One way we have addressed this is to have the principal investigator on the same group chat as the less experienced fieldworker while they are working with a speaker. That way, if the elicitation is not going the way that the fieldworker was hoping, the principal investigator can intervene. This has been helpful in certain situations where a different explanation of the task was needed, or where the task needed to be adjusted to fit the speaker. For example, in one instance, a fieldworker was presenting the instructions for a task to a speaker, and the speaker ended up needing examples to understand what we were asking for. The principal investigator was able to draw upon her experience to come up with a story on the spot to help clarify the question for the speaker.

Tasks frequently have to be re-clarified, particularly if some time has passed since the previous session. For example, one speaker was presented with lexical forms that the fieldworker had con-

structed herself in order to test the semantic felicity of a root-morpheme pairing. The speaker was informed that the pairing might sound like nonsense; this point had to be reiterated several times when the task was reintroduced after a period of time. However, the original structure of this task was not well suited to the speaker, who was not accustomed to seeing Akuzipik as single words without context. Subsequent sessions have paired the forms with context and have been more successful. It is possible that the written medium encourages the presenting of lists of forms without context in a way that wouldn't be considered in person—caution is advised.

Fieldworkers have also had to be doubly sure that they are making clear which parts of the context, word form, or sentence are under investigation. It is much more difficult to be sure that the speaker is noticing all of the pertinent parts of the inquiry when the fieldworker is unable to hear or otherwise observe the speaker as they are reading and considering the data. In a few cases, the speaker at first misread a form, or did not notice a small difference between two forms, and the fieldworker had to point these out again later. The inability to format inquiries beyond the simple methods described above has also led to a speaker overlooking certain questions that are not seen as integral to the translation task.

Follow-up questions to speaker responses would almost certainly be more productive in person, particularly when multiple unrelated questions have been asked and there are a number of questions to follow up on. Speaker and fieldworker are often juggling multiple data points at a time, which can result in the feeling of participating in multiple unfinished conversations. Given the uncertainty in speaker response time, however, asking follow-up questions one at a time is also less than ideal. For Chen's investigation of morpheme meanings, these circumstances have prompted a shift in methodology, encouraging a broad shallow sweep over as many data points as possible in a first pass before selecting a subset of those data points for a second in-depth pass.

Working via written channels, as previously mentioned, can be more difficult when it comes to teasing apart or conveying subtle semantic (or acceptability) distinctions; this kind of task is often best supplemented with audio/audio-visual communication (or, ideally, in-person work). However, in instances where the speaker may wish to re-consult a context or set of instructions, etc., particularly asynchronously while mulling over questions, these written media have proven useful.

Keeping track of data is not necessarily any more difficult or different than keeping track of data gathered in person and can in fact be more straightforward given the lack of audio files or need for transcription. The researchers copy the data from emails, texts, and Facebook Messenger and paste it into Word or plain text documents, highlighting target forms and adding comments to discuss key points as appropriate, and noting the speaker number, date, elicitor, medium, and topic in a heading. Screenshots of the conversation are also typically saved in this Word document. For projects looking at particular forms, tracking multiple forms, or tracking responses across multiple speakers, data is transferred to a spreadsheet, with columns for the Akuzipik data, glossing, translation, speaker feedback, and other comments (see the Appendix for an example). Speakers are notated in these documents with a speaker number that is assigned when the consent form is first signed. Two metadata documents are kept: One spreadsheet tracks each session (date, location, length, participant number, researcher, file name(s), amount paid, date paid, etc.) and is shared online so that all researchers involved (but not others) can update it. Another spreadsheet links speaker numbers with names and other personally identifiable information, as well as preferences noted on the consent form (recording preferences, whether to be acknowledged in publications, etc.). This key is kept on the secure hard drive of the principal investigator (Schreiner), who can consult it for information needed by the other members of the team.

5.2 Interpersonal relationships and personal interaction

Several challenges have also arisen that are specific to the interactions between speaker and fieldworker. Particularly for newer fieldworkers, it has been more difficult to create personable and long-lasting relationships without any in-person contact. However, messaging has also created a more informal environment that has assisted in maintaining a seamlessness and consistency of conversations between fieldworker and speaker.

In a typical in-person elicitation session, we begin with small talk and making the speaker comfortable in the environment, especially if we have not worked with the speaker before. In an online environment, we find that it is still important to make small talk with speakers, connect with them about personal topics as appropriate, and "check in" at times other than just elicitation session times. Those of us who worked with speakers we had not met in person found it challenging to decipher the appropriate level of formality, etc., to form a successful working relationship. It can also at times be difficult to gauge what a speaker is or is not familiar with outside the language, especially when working with someone we have not worked with in person before. For instance, we had believed one speaker to be familiar with the concept of morphemes, despite lacking formal linguistic training, but this turned out not to be the case.

While distance fieldwork has been more challenging for the fieldworkers than in-person fieldwork in a number of ways, it has also been beneficial. While it is more difficult to build new relationships with speakers we have not worked with before, in a way it has been easier to maintain existing relationships with speakers now that it has become commonplace to work and check in remotely. From the point of view of the speaker, having the ability to stay in contact with and work with fieldworkers throughout the year has been a positive effect of distance fieldwork.

An additional benefit of working remotely is that we have been able to start working with one speaker who had previously had too many other commitments to work with us. This speaker was able to participate because they were able to fit it in between other parts of their daily life. Also, typically our primary trips for fieldwork occur in the summer, when the fieldworkers have more free time away from teaching and learning responsibilities. However, the summer is not the best time for the speakers in this community, because many of them travel to cabins on other parts of the island to fish, etc. during the summer months. Setting up distance work has also allowed us to connect with speakers more frequently than we would be able to in person. Although we do not anticipate moving to distance fieldwork entirely, it will remain a valuable supplement to our in-person fieldwork even after COVID restrictions have been lifted. The remote work setup has also allowed us to work with multiple speakers on the same data more easily—it is easier for one fieldworker to pursue a question with multiple speakers via online means than it is to do so in person.

5.3 Issues of timing and synchronicity

Researchers and speakers found both benefits and drawbacks to working remotely in terms of timing and synchronicity. Scheduling was in fact somewhat easier than it would have been in person, since many sessions were done asynchronously. In the case of the research presented here, the speakers are three or four time zones away from the researchers' institutions, but in a practical sense they are even further distant, given the differing schedules of village life versus the academic workday. This meant that in cases where the fieldworker and the speaker wish to work synchronously, scheduling can be difficult, but accomplishing work asynchronously is much easier than setting up synchronous meetings in person. From a practical standpoint, with asynchronous work it is also more difficult

to determine how many "billable hours" the speaker has participated in; a conversation early on between speaker and fieldworker about expectations for time tracking, etc., makes it workable. As discussed before, the instantaneous record provided by messaging applications can prove useful in this situation as well. By at least determining the extreme boundaries of the session period by the timestamps of the first and last messages sent, a broad picture of the conversation can be established.

However, the concept of a concrete "session" with a clear beginning and end does not really exist when undertaking fieldwork via these means. While speakers appreciated the extra time available to think about questions, fieldworkers sometimes found themselves challenged by varying paces of response from speakers. At times, a speaker might respond more quickly than the fieldworker was prepared for; other times they might take a week or more to respond to an inquiry. In some cases, the dialogue between fieldworker and speaker is disconnected and disjointed, including pauses for several days up to a few weeks, with comments being added here and there. A fieldworker should be cognizant that they will need to be ready to join the conversation at any time with the appropriate analytical and contextual tools. For research involving intricate discourse contexts, it can be a challenge to keep all the relevant details in mind. It behooves the fieldworker to have a plan worked out in detail in advance so that sessions that involve days- or weeks-long breaks can still proceed in a relatively linear fashion; however, the fieldworker must also always be ready to alter their approach to address new data as it is given by the speaker. Of course, this challenge exists in face-to-face fieldwork, but in discontinuous dialogue, the fieldworker must also make sure to track the decisions that the speaker is making and why, even if this particular conversation has not been touched for some time. In Schreiner's and Haas's work, this context-monitoring was operationalized via the maintenance of a few stable speech scenarios in a familiar universe of discourse, with a reliable set of variants that would be tested with each new form. In this way, the speaker and fieldworker are always able to lean back on a foundation which is accessible and comprehensible for them.

Despite its challenges, the asynchronous format has been beneficial in that it allows fieldworkers time between receiving speaker responses and generating novel questions and prompts. It allows time to not only formally analyze the responses received, but also to reflect on data collection practices and methodologies, particularly whether the right questions are being asked and being asked in a way that is agreeable to the speaker. In the event that they are not, there is time to adjust the data collection practices to the benefit of both, which in turn improves the quality of data being collected and the working relationship between speaker and fieldworker. Both parties also occasionally inquire about work while the other is in the middle of other obligations; however, the social acceptability of some latency between message and response in these media means that this has not been a major issue. Some fieldworkers have found it more difficult to separate work from the rest of their life when receiving message notifications on their phones, etc.—at least in comparison to a typical fieldwork situation, where the fieldworker would be able to devote a particular chunk of their day to elicitation sessions. Others have found the format beneficial. How synchronously, how quickly, and how consistently the interactions between researcher and speaker take place depends very much on the habits of the speaker (with the researchers attempting to accommodate these patterns as much as possible.)

From the perspective of at least one speaker (Aningayou), distance fieldwork was less stressful than in-person fieldwork. In-person elicitation sessions can go on for several hours if the speaker is willing, but even if everyone is amenable to continuing, these sessions can be tiring—for everyone involved, but especially for speakers. Distance elicitation allowed speakers to think about their answers for as long as they needed without feeling the pressure of having a fieldworker in the room

with them. They were also able to use this extra time to think about how to explain their answers better, and to come up with more examples of particular phenomena.

6 Conclusion and implications

Here we have described some of our experiences in undertaking semantic fieldwork with speakers of Akuzipik, primarily through message-based, asynchronous "sessions". Overall, our experience doing semantic fieldwork from a distance has been a positive one. Many of the inconveniences for fieldworkers have been matched by more positive experiences for the speakers. There are several aspects of this situation that we plan to integrate into our in-person fieldwork (or continue in our distance fieldwork) in the future:

1. Having multiple sessions with the same speaker is often desirable in an in-person situation, but not always possible due to scheduling constraints. In the future, we may try to continue work begun in person with more speakers via online means outside of the time frame of our main in-person fieldwork visits.

2. Speakers have appreciated having more time to think about their responses; not having fieldworkers in the room with them also reduced feelings of stress. This might be brought into in-person fieldwork in the following way: Speakers could be presented with questions in one session as an introduction, and then asked to return to provide their answers. Or, speakers could be given instructions and questions in person, and left with a questionnaire to fill out at home. Of course, one of the benefits of in-person elicitation is the productive back-and-forth between speaker and fieldworker that arises when both are together in space and time. However, it may be the case that this type of interaction is best supplemented by other, more asynchronous interactions that are of benefit to the speaker. Community-led documentation, undertaken by speaker-linguists, would also help reduce the negatives associated with outsider/academic-led projects.

3. While working with multiple speakers at the same time is frequently a desirable approach, it is sometimes difficult to implement given individual scheduling constraints. One option would be to combine in-person and distance fieldwork, in that the fieldworkers could meet with a single speaker but set up a "phone-a-friend" situation with another speaker who was available but unable to be physically present. We have occasionally ended up with a similar setup on previous in-person trips, when one speaker calls or texts another to help remember a word, etc.

This experience has also underscored our desire to train native speaker linguist(s) to both collect data and work on language revitalization efforts in the community—at first, when fieldworkers cannot be there, and eventually, as the primary leader(s) of these efforts. We also plan to introduce a type of crowd-sourcing in the online implementation of the dictionary as a way for the community to work together to improve the existing dictionary (something that many community members have expressed an interest in).

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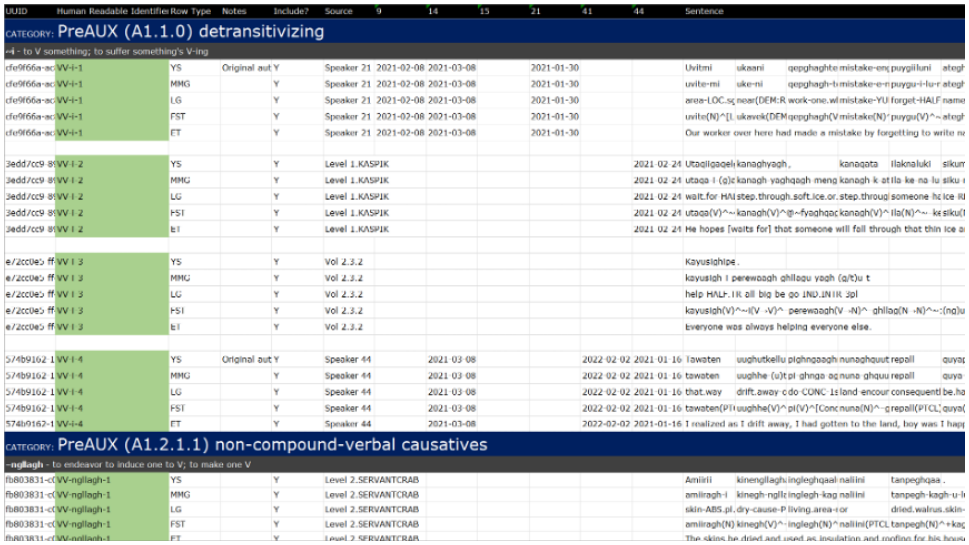
Appendix

The following is an example from a spreadsheet kept by Chen in studying the semantics and morphosyntax of derivational morphemes in Akuzipik. The columns represent, from left to right, a unique identifier, a human-readable identifier, notes, the type of row (Akuzipik, glossing, free translation, etc.), whether Chen plans to include the sentence in her dissertation, the source of the sentence, the date that the sentence was confirmed with each of the six speakers Chen has been working with, and the sentence itself. The spreadsheet is divided into sections that correspond to each morpheme under study.



UUID	Human Readable Identifier	Row Type	Notes	Include?	Source	9	14	15	21	41	44	Sentence
CATEGORY: PreAUX (A1.1.0) detransitivizing												
-ɬɣ - to V something; to suffer something's V-ing												
cfe9f66a-ac	VV-ɬ-1	YS	Original aut	Y	Speaker 21	2021-02-08	2021-03-08		2021-01-30			Uvitmi ukaani qapghaghte mistake-en(puygiiluni ategh
cfe9f66a-ac	VV-ɬ-1	MMG		Y	Speaker 21	2021-02-08	2021-03-08		2021-01-30			uvite-mi uke-ni qapghagh-t mistake-e-n puygu-i-lu-r ategh
cfe9f66a-ac	VV-ɬ-1	LG		Y	Speaker 21	2021-02-08	2021-03-08		2021-01-30			area-LOC.sg near(DEM:R work-one.wl mistake-YU forget-HALF name
cfe9f66a-ac	VV-ɬ-1	FST		Y	Speaker 21	2021-02-08	2021-03-08		2021-01-30			uvite(N)^[L ukavek(DEM qapghagh(V mistake(N)^puygu(V)^~ategh
cfe9f66a-ac	VV-ɬ-1	ET		Y	Speaker 21	2021-02-08	2021-03-08		2021-01-30			Our worker over here had made a mistake by forgetting to write n
3edd7cc9-8	VV-ɬ-2	YS		Y	Level 1.KASPIK						2021-02-24	Utaqiiqaqeki kanaghyagh, kanaqata ilaknaluki sikun
3edd7cc9-8	VV-ɬ-2	MMG		Y	Level 1.KASPIK						2021-02-24	utaqa-ɬ-(q)c kanagh-yaghaqgh meng kanagh-k-at ila-ke-na-lu siku
3edd7cc9-8	VV-ɬ-2	LG		Y	Level 1.KASPIK						2021-02-24	wait.for HAL step.through.soft.ice.or.step.throug someone hc ice #U
3edd7cc9-8	VV-ɬ-2	FST		Y	Level 1.KASPIK						2021-02-24	utaqa(V)^~kanagh(V)^@~fyaghqac kanagh(V)^ila(N)^~ ke siku(
3edd7cc9-8	VV-ɬ-2	ET		Y	Level 1.KASPIK						2021-02-24	He hopes [waits for] that someone will fall through that thin ice a
e/2cc0eb	VV-ɬ-3	YS		Y	Vol 2.3.2							Kayuqiqhipe.
e/2cc0eb	VV-ɬ-3	MMG		Y	Vol 2.3.2							kayuqiqh-ɬ perewaaqh ghillaqu yaqh (q/ɬ)u-ɬ
e/2cc0eb	VV-ɬ-3	LG		Y	Vol 2.3.2							help HALF-1R all big-be go 1ND.1NTR Jpl
e/2cc0eb	VV-ɬ-3	FST		Y	Vol 2.3.2							kayuqiqh(V)^~ɬ(V-V)^ perewaaqh(V-N)^ ghllaq(N-N)^~:(ng)u
e/2cc0eb	VV-ɬ-3	ET		Y	Vol 2.3.2							Everyone was always helping everyone else.
574b9162-1	VV-ɬ-4	YS	Original aut	Y	Speaker 44		2021-03-08			2022-02-02	2021-01-16	tawaten uughutkellu pighngaaqh nunaghquut repall
574b9162-1	VV-ɬ-4	MMG		Y	Speaker 44		2021-03-08			2022-02-02	2021-01-16	tawaten uughhe-(u)t-pi ghnga-aq nuna-ghquu repall
574b9162-1	VV-ɬ-4	LG		Y	Speaker 44		2021-03-08			2022-02-02	2021-01-16	that.way drift.away-c-do-CONC-1s land-encour consequentl be.ho
574b9162-1	VV-ɬ-4	FST		Y	Speaker 44		2021-03-08			2022-02-02	2021-01-16	tawaten(PTC uughhe(V)^pi(V)^[Conc nuna(N)^-qrepall(PTCL quya(
574b9162-1	VV-ɬ-4	ET		Y	Speaker 44		2021-03-08			2022-02-02	2021-01-16	I realized as I drift away, I had gotten to the land, boy was I hap
CATEGORY: PreAUX (A1.2.1.1) non-compound-verbal causatives												
-ngllagh - to endeavor to induce one to V; to make one V												
fb803831-c0	VV-ngllagh-1	YS		Y	Level 2.SERVANTCRAB							Amiirii kinengllagh-i ngleghqaaq-nallini tanpeghqaa.
fb803831-c0	VV-ngllagh-1	MMG		Y	Level 2.SERVANTCRAB							amiiragh-ɬ kinegh-ngllr inglegh-kag nallini tanpegh-kagh-u-l
fb803831-c0	VV-ngllagh-1	LG		Y	Level 2.SERVANTCRAB							skin-ABS.pl. dry-cause-P living.area-LOC dried.walrus.skin-
fb803831-c0	VV-ngllagh-1	FST		Y	Level 2.SERVANTCRAB							amiiragh(N) kinegh(V)^-inglegh(N)^nallini(PTCL tanpegh(N)^+kag
fb803831-c0	VV-ngllagh-1	ET		Y	Level 2.SERVANTCRAB							The skins he dried and used as insulation and roofing for his house

Below are two examples of data transferred from a Facebook Messenger conversation to a Word document. The first is an example of part of a longer set of questions; the second is an example of a few short questions sent in quick succession.

Speaker #21
2021-05-15
Sylvia Schreiner
Via Facebook messenger
Questions from going through Jacobson
Copy-pasted from Facebook messenger
Note: still need back-translation on latter sentences

A girl from Gambell spotted a wolverine. I don't know the girl, so you're just telling me the story in general. Doesn't need to be exact translation—do it how you would say it in Yupik (but if you can try to keep 'girl' and 'wolverine' etc. where I have them, instead of just doing she/it, that would be good). Then can you back-translate into English what you've written?

1. A girl saw a wolverine the other day.
2. Yes, a wolverine showed up/appeared!
3. That's right, a wolverine surprised a girl right here in town. I'll tell you the story:
4. A girl was out walking.
5. She spotted a wolverine far away.
6. She got closer so she could see it better.
7. The wolverine didn't notice the girl.
8. The girl watched the wolverine.
9. The wolverine was eating something, but the girl couldn't see what.
10. The wolverine saw the girl.
11. The wolverine ran away.
12. The girl left.

1. Aghnaghaq qafsigmeng sghhaasimaniiq akuuwaaq, nani imaani. I added the last part- "where I wonder" or just in general "where (one) wonder/wonders".
2. Aah taawa qafsik aliighhtuq/kelguusimaaq ellmiineng " "Qafsik ipa taawa pimalghii" There's many ways one can say this.
3. Ipa taawa (I didn't see this, wrote it in # 2 also-lol) qafsiigem aghnaghaq upughhsimaakanga ukaani mangteghani"

P. -1 -
Speaker #21
2022-04-14
Sylvia Schreiner
Via Facebook messenger

Copy-pasted from Facebook messenger
[NOTES FROM INTERVIEWER]

Hey! quick question for you--how would you translate this sentence literally? Apakullghiigni unangniighyaghnaqukung. We understand the second word, but we're trying to figure out the first one.

My Grandpa and I are going hunting/to go try get game. Unangnighyaq = try get game.

The other question we had was, if pinightuq is like 'he/she is good', how would you say 'he/she was good', in the past? or is it the same?

Pinighyaghtuq. Itagnaghyaghtuq. If one has gotten better and is the same several days later one could say ‘tawaatetaaquq/ and if one isn’t too good but nothing can be done or won’t get better but is hanging on it’d be ‘tawaateteghragaquq’.