

Typotheque

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Typotheque

North American Syllabics

Proposal to encode 16
additional characters to the
Unified Canadian Aboriginal
Syllabics

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1 SUMMARY OF PROPOSED CHARACTERS

The following proposal requests 16 additional characters to be added to the encoded script of Unified Canadian Aboriginal Syllabics. The proposed characters have been summarized below with representative glyphs and proposed character names with annotations where applicable. A new block, Unified Canadian Aboriginal Syllabics Extended-A (U+11AB0..U+11ABF), has been recommended by the Script Ad Hoc.

The author has prepared a style-matched font for the purpose of implementing into the code chart.

11AB0 Unified Canadian Aboriginal Syllabics Extended-A 11ABF

Syllables for Nattilik

11AB0	𐏃	CANADIAN SYLLABICS NATTILIK HI
11AB1	𐏄	CANADIAN SYLLABICS NATTILIK HII
11AB2	𐏅	CANADIAN SYLLABICS NATTILIK HO • Nattilik (HU)
11AB3	𐏆	CANADIAN SYLLABICS NATTILIK HOO • Nattilik (HUU)
11AB4	𐏇	CANADIAN SYLLABICS NATTILIK HA
11AB5	𐏈	CANADIAN SYLLABICS NATTILIK HAA
11AB6	𐏉	CANADIAN SYLLABICS NATTILIK SHRI
11AB7	𐏊	CANADIAN SYLLABICS NATTILIK SHRII
11AB8	𐏋	CANADIAN SYLLABICS NATTILIK SHRO • Nattilik (SHRU)
11AB9	𐏌	CANADIAN SYLLABICS NATTILIK SHROO • Nattilik (SHRUU)
11ABA	𐏍	CANADIAN SYLLABICS NATTILIK SHRA
11ABB	𐏎	CANADIAN SYLLABICS NATTILIK SHRAA

Syllables for Cree and Ojibway

11ABC	𐏏	CANADIAN SYLLABICS SPE
11ABD	𐏐	CANADIAN SYLLABICS SPI
11ABE	𐏑	CANADIAN SYLLABICS SPO
11ABF	𐏒	CANADIAN SYLLABICS SPA

2 UNICODE CHARACTER PROPERTIES

The following list provides the Unicode general category properties for the proposed additions to UCAS:

```
11AB0;CANADIAN SYLLABICS NATTILIK HI;Lo;0;L;;;;N;;;;;
11AB1;CANADIAN SYLLABICS NATTILIK HII;Lo;0;L;;;;N;;;;;
11AB2;CANADIAN SYLLABICS NATTILIK HO;Lo;0;L;;;;N;;;;;
11AB3;CANADIAN SYLLABICS NATTILIK HOO;Lo;0;L;;;;N;;;;;
11AB4;CANADIAN SYLLABICS NATTILIK HA;Lo;0;L;;;;N;;;;;
11AB5;CANADIAN SYLLABICS NATTILIK HAA;Lo;0;L;;;;N;;;;;
11AB6;CANADIAN SYLLABICS NATTILIK SHRI;Lo;0;L;;;;N;;;;;
11AB7;CANADIAN SYLLABICS NATTILIK SHRII;Lo;0;L;;;;N;;;;;
11AB8;CANADIAN SYLLABICS NATTILIK SHRO;Lo;0;L;;;;N;;;;;
11AB9;CANADIAN SYLLABICS NATTILIK SHROO;Lo;0;L;;;;N;;;;;
11ABA;CANADIAN SYLLABICS NATTILIK SHRA;Lo;0;L;;;;N;;;;;
11ABB;CANADIAN SYLLABICS NATTILIK SHRAA;Lo;0;L;;;;N;;;;;
11ABC;CANADIAN SYLLABICS SPE;Lo;0;L;;;;N;;;;;
11ABD;CANADIAN SYLLABICS SPI;Lo;0;L;;;;N;;;;;
11ABE;CANADIAN SYLLABICS SPO;Lo;0;L;;;;N;;;;;
11ABF;CANADIAN SYLLABICS SPA;Lo;0;L;;;;N;;;;;
```

Syllables for Nattilik

11AB0	𐀀	CANADIAN SYLLABICS NATTILIK HI (figures 1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12)
11AB1	𐀁	CANADIAN SYLLABICS NATTILIK HII (figures 1, 4, 5, 8, 12)
11AB2	𐀂	CANADIAN SYLLABICS NATTILIK HO • Nattilik (HU) (figures 1, 2, 3, 7, 8, 11, 12, 13)
11AB3	𐀃	CANADIAN SYLLABICS NATTILIK HOO • Nattilik (HUU) (figures 1, 9, 12)
11AB4	𐀄	CANADIAN SYLLABICS NATTILIK HA (figures 1, 2, 3, 5, 6, 8, 10, 11, 12, 13)
11AB5	𐀅	CANADIAN SYLLABICS NATTILIK HAA (figures 1, 5, 6, 12)
11AB6	𐀆	CANADIAN SYLLABICS NATTILIK SHRI (figures 1, 2, 3, 5, 11, 12, 13)
11AB7	𐀇	CANADIAN SYLLABICS NATTILIK SHRII (figures 1, 6, 12)
11AB8	𐀈	CANADIAN SYLLABICS NATTILIK SHRO • Nattilik (SHRU) (figures 1, 2, 3, 5, 7, 8, 10, 11, 12, 13)
11AB9	𐀉	CANADIAN SYLLABICS NATTILIK SHROO • Nattilik (SHRUU) (figures 1, 7, 8, 12)
11ABA	𐀊	CANADIAN SYLLABICS NATTILIK SHRA (figures 1, 2, 3, 5, 6, 8, 11, 12, 13)
11ABB	𐀋	CANADIAN SYLLABICS NATTILIK SHRAA (figures 1, 7, 9, 12)

Note on proposed character names The practice of annotating Inuktitut spelling preferences which differ from the UCAS main and extended blocks' names lists is noted in cases such as U+1581 𐀄 CANADIAN SYLLABICS QO, annotated as "Inuktitut (QU)". As a result, the above proposed character names provide annotations for the local Nattilik spelling preferences for the characters which differ in representation from the UCAS spelling practice.

It is noted that this naming practice shows inconsistencies within the UCAS main and extended blocks, for example, in cases such as U+166F 𐀑 CANADIAN SYLLABICS QAI and U+1670 𐀒 CANADIAN SYLLABICS NGAI. These character names do not technically require an annotation as they are only used in UCAS to represent the Inuktitut syllables QAI and NGAI. However, based on the current character naming convention within UCAS, they should be named U+166F 𐀑 CANADIAN SYLLABICS QE and U+1670 𐀒 CANADIAN SYLLABICS NGE, with annotations "Inuktitut (QAI)" and "Inuktitut (NGAI)".

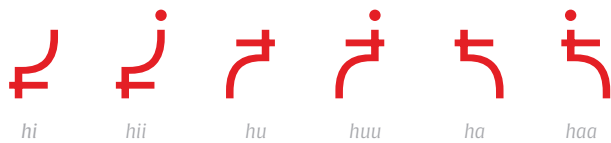
As a result of these inconsistencies, this proposal suggests the consideration of moving away from this practice in favour of using the spellings preferred by the local language communities. These local spelling preferences can be confirmed in official transcription systems for these languages, such as the standardized Inuktitut Qaliujaaqpait, which the above Nattilik annotations conform to.

3 ADDITIONS FOR NATTILIK

The following characters are required for rendering unique sounds in the Nattilik language (Nattilingmiutut) in Western Nunavut, a member of the Western Canadian Inuktit language family. While Nattilik is written with the standard Inuktit syllabary included in UCAS, these characters have yet to be encoded, even though they are essential to the correct representation of this language.

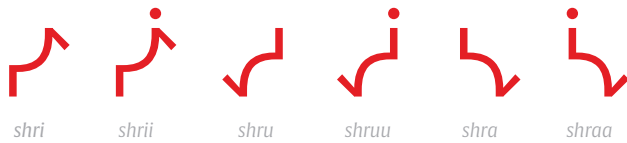
These proposed characters are intended to encode the syllabics created by Miriam (Nilaulaaq) Aglukkaq and Hadlaritkut Ikajuqtigiit / Hadlari Consulting of Cambridge Bay, Nunavut¹ for the sounds that are not represented by the general Inuktit Syllabics orthography. The absence of encoded characters within the Unicode standard for these syllabics prohibits the use of the language and presents barriers to digital text exchange, which puts it at risk of endangerment.

Note that there are multiple roman transcriptions for Inuktit: the standardized Inuktit Qaliujaaqpait² (Inuktit roman orthography), as well as local roman orthographies, varying from region to region. The proposed character names for the requested additional Nattilik characters have chosen to use the transcription model from the standardized Inuktit Qaliujaaqpait, which is the unified roman writing system across all of Nunavut for the Inuktit dialects.³ Additionally, the Inuktit Qaliujaaqpait follows the same transcription system model currently used by the UCAS main and extended block character names.



h series Nattilik

The *h* series for the Nattilik is similar in shape to 𐀀 s series, with a horizontal crossbar stroke meeting the vertical stroke of the syllabic, as shown above. The dot placed above each syllabic indicates that the vowel is long, and must also be included in the series as independent characters to correctly represent the orthography.



shr series Nattilik

The *shr* series is similar in shape to 𐀀 s series, with an additional diagonal stroke added to the "head" or "foot" of the syllabic character. The dot placed above each syllabic indicates that the vowel is long, and must also be included in the series as independently encoded characters to correctly represent the orthography.

1 JIM BELL, 'Teacher devises special syllabics for Nattilik.' In *Nunatsiaq News* | ᓄᓐᓴᓴᓴᓴ ᐱᓴᓴᓴᓴᓴ, 14 February 2011, https://nunatsiaq.com/stories/article/987678_teacher_devises_special_syllabics_for_nattilingmiutut/

2 From *Inuktit Tusaalanga*, 'Roman Orthography (Qaliujaaqpait).' 2020 <https://tusaalanga.ca/node/2507>

3 JIM BELL, 'National Inuit org approves new unified writing system.' In *Nunatsiaq News* | ᓄᓐᓴᓴᓴᓴ ᐱᓴᓴᓴᓴᓴ, 27 September 2019, <https://nunatsiaq.com/stories/article/national-inuit-org-approves-standard-roman-orthography-for-all-dialects/>



September 3, 2020

ᐱᓄᐱᓐ ᐱᓐᓂᓐᓂᓐᓂᓐ ᐃᐱᐱᓐᓂᓐᓂᓐᓂᓐ ᓂᓐᓂᓐᓂᓐᓂᓐᓂᓐ: ᐃᓂᓐᓂᓐᓂᓐᓂᓐ ᓂᓐᓂᓐᓂᓐᓂᓐᓂᓐ ᓂᓐᓂᓐᓂᓐᓂᓐᓂᓐ ᐃᓂᓐᓂᓐᓂᓐᓂᓐᓂᓐ ᐃᓂᓐᓂᓐᓂᓐᓂᓐᓂᓐ ᐱᓐᓂᓐᓂᓐᓂᓐᓂᓐ ᐃᓂᓐᓂᓐᓂᓐᓂᓐᓂᓐ

Regarding the inclusion of Kutaiřřutit special characters into Unified Canadian Aboriginal Syllabics

In the early 1970s when the Inuktitut syllabics chart was being revised by the Inuit Cultural Institute of Arviat, Nunavut, and in conjunction with linguists, they completely overlooked key phonemes that exist in Nattilingmiutut and Utkuhikřalingmiutut in the East Kitikmeot region of Nunavut. At that time, I was a child and fluent speaker, but by 1979 I grew into the role and profession of interpreter-translator. When I was trained by the Department of Information in Yellowknife, N.W.T. in the new syllabics chart in 1978, I was immediately aware of its short comings with regards to the Nattlingmiut and Utkuhiřalingmiut communities within which I served as a language professional.

When I went to university and did a Master’s thesis interviewing Nattilingmiut elders (2004)¹, I borrowed ᐱᓐᓂᓐᓂᓐ from outside of the Inuktitut font base in order to at least represent that there was both a retroflexive r (ř) sound and a related ‘j’ sound (ᐱᓐᓂᓐᓂᓐ). I did this by copying and pasting each instance, because there was no key stroke for this in Inuktitut. The feedback from Nattilingmiut elders was overwhelming positive. Taalliraq Arviq, for example has a full interview in my thesis, which she read and reviewed herself, and she exclaimed with great enthusiasm and deep emotion “ᐃᓂᓐᓂᓐᓂᓐᓂᓐ ᐱᓐᓂᓐᓂᓐᓂᓐᓂᓐᓂᓐ ᐃᓂᓐᓂᓐᓂᓐᓂᓐᓂᓐᓂᓐᓂᓐᓂᓐ” [I have for the first time in my life seen our Nattilingmiut language on paper!]. That was my inspiration to persist in supporting more solutions to address other characters that were missing.

For a few more years, we had no options until Hadlari Consulting worked with Tiro to create the other missing characters ᐱᓐᓂᓐᓂᓐ/ᐱᓐᓂᓐᓂᓐ/ᐱᓐᓂᓐᓂᓐ and to have them all together on a special keyboard. Since the font and keyboard were issued, I’ve used them exclusively in all of my Nattilingmiutut work, both hand written and typed.

I am aware of the high level of support that the Kutaiřřutit have among Nattilingmiut speakers, language professionals and teachers in the East Kitikmeot. As well, while the Government of Nunavut is bound to only accept the current Unicode syllabics set as official, they have funded the development of Kutaiřřutit font and keyboard systems because of the strong grassroots support and use of Kutaiřřutit. Once Kutaiřřutit are included in Unicode, it frees up both government and industry in Nunavut to officially support a very isolated region in their efforts to mitigate language loss.

I offer wholehearted support to Kevin King and Typotheque in their application to Unicode for the inclusion of Kutaiřřutit.

Janet Tamalik McGrath, PhD
www.tamalik.com

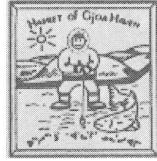
¹ <https://www.bac-lac.gc.ca/eng/services/theses/Pages/item.aspx?idNumber=190775425>

figure 1 A letter of support dated 3 September 2020 from Janet Tamalik McGrath expressing support and providing context for the current proposal effort requesting the additions of the Nattilik characters not currently encoded in UCAS.

The above letter shows attestation for U+11AB0 ᐱᓐ hi, U+11AB1 ᐱᓐ hii, U+11AB2 ᐱᓐ hu, U+11AB3 ᐱᓐ huu, U+11AB4 ᐱᓐ ha, U+11AB5 ᐱᓐ haa, U+11AB6 ᐱᓐ shri, U+11AB7 ᐱᓐ shrri, U+11AB8 ᐱᓐ shru, U+11AB9 ᐱᓐ shruu, U+11ABA ᐱᓐ shra, and U+11ABB ᐱᓐ shraa.

Note that Tamalik McGrath refers to the missing Nattilik characters as “Kutaiřřutit”, which translates in English to “missing fonts” or “missing characters”.

From Janet Tamalik McGrath, ‘Regarding the inclusion of Kutaiřřutit special characters into Unified Canadian Aboriginal Syllabics.’ Tamalik & Associates, 3 September 2020.



The Unicode Consortium
P.O. Box 391476
Mountainview, CA 94039-1476
U.S.A.
June 18, 2015

Regarding : Unicode designation for additional Inuit language syllabics

This letter is coming from the Hamlet of Gjoa Haven, Nunavut, supporting the proposal of the Ikajuqtigiit Society to have unicode designation for the additional syllabic phonemes for the sounds **hi, hu, ha,** and **shri, shru, shra.**

In our community we have speakers from several different Inuit language groups, including the *Nattilingmiutut* dialect. The sounds listed above are part of the *Nattilingmiutut* dialect.

These additional Inuit language syllabics are necessary for writing the sounds of the *Nattilingmiutut* dialect, and are presently being used by the teachers who are teaching this dialect in our community. We would like to support the ability of people to write their dialect with the same accuracy as the spoken language.

A handwritten signature in black ink, appearing to read 'Joanni Sallerina', with a stylized flourish at the end.

Joanni Sallerina
Mayor, Hamlet of Gjoa Haven
P.O. Box 200
Gjoa Haven, Nunavut
X0B-1J0
Email- mayor@qiniq.com
(867) 360-7141

figure 2 A letter dated 18 June 2015 from the Mayor of Gjoa Haven, Joanni Sallerina, to the Unicode Consortium, expressing support towards a proposal effort by the Ikajuqtigiit Society requesting the additions of U+11AB6 ᓄ *shri*, U+11AB8 ᓅ *shru*, U+11ABA ᓆ *shra*, U+11AB0 ᓇ *hi*, U+11AB2 ᓈ *hu*, and U+11AB4 ᓉ *ha*.

From Sallerina, *Unicode designation for additional Inuit language syllabics*, Gjoa Haven, Nunavut, 18 June 2015.

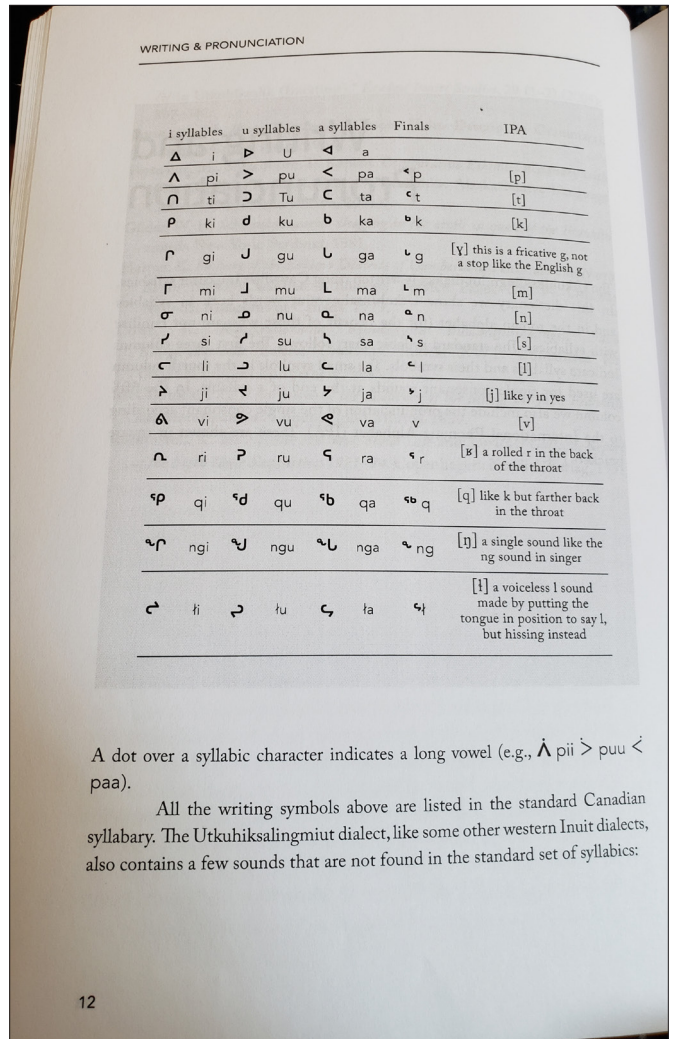
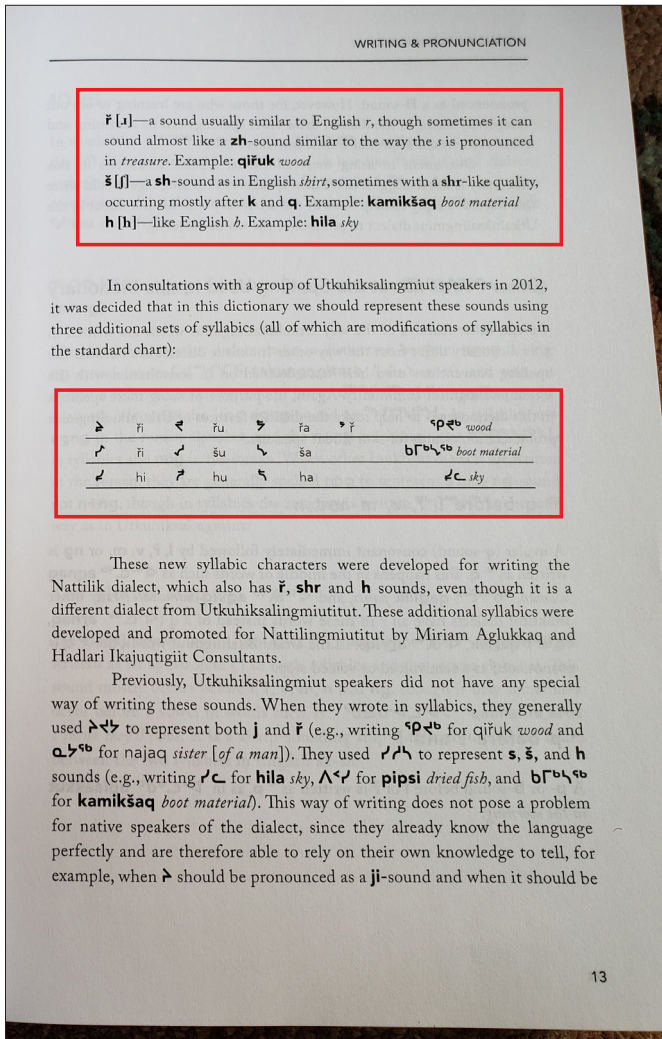


figure 3 Pages 13 and 12 from the 'Writing and pronunciation' section in 𐅁𐅋𐅏𐅓 𐅉𐅐𐅗𐅈 𐅉𐅐𐅗𐅈 𐅉𐅐𐅗𐅈 / Utkuhiksalingmiut Uqauhiitigtug Uqauhiilurut / Dictionary of Utkuhiksalingmiut Inuktitut postbase suffixes, showing attestation for U+11AB6 𐅌 shri, U+11AB8 𐅌 shru, U+11ABA 𐅌 shra, U+11AB0 𐅌 hi, U+11AB2 𐅌 hu, and U+11AB4 𐅌 ha.

Note that the above chart, left, on page 13 showing the proposed Nattilik characters does not include superscripted character finals. The Nattilik *h* and *shr* series' do not require the use of a final consonant form, as in other syllable series' in this orthography.

Additionally, note on page 13, top left, the reference to multiple ways of transcribing the two series'. In the above sample, the preferred local Nattilik roman orthography transcription and IPA transcriptions are provided and described, with reference to the standardized Inuktitut Qaliujaaqpait transcription system. In the case of the proposed characters, the *shr* sound is more commonly represented in the local Nattilik dialect's roman orthography by community members as š (ši, šu, ša versus shri, shru, shra). Additionally, the IPA transcription for the two missing series' is as follows: š / shr [ʃ] and h [h]. The chart on page 12, right, provides further notation towards multiple transcriptions for the Inuktitut dialects.

The proposed additional Nattilik character names have chosen to use the standardized Inuktitut Qaliujaaqpait transcription system, which is the agreed upon system by the Government of Nunavut for all of the dialects it administers. Additionally, this model also follows the standard utilized by the current ucas main and extended blocks' character name transcriptions.

From Briggs, Johns, Cook, Nunavut Arctic College Media, August 2015

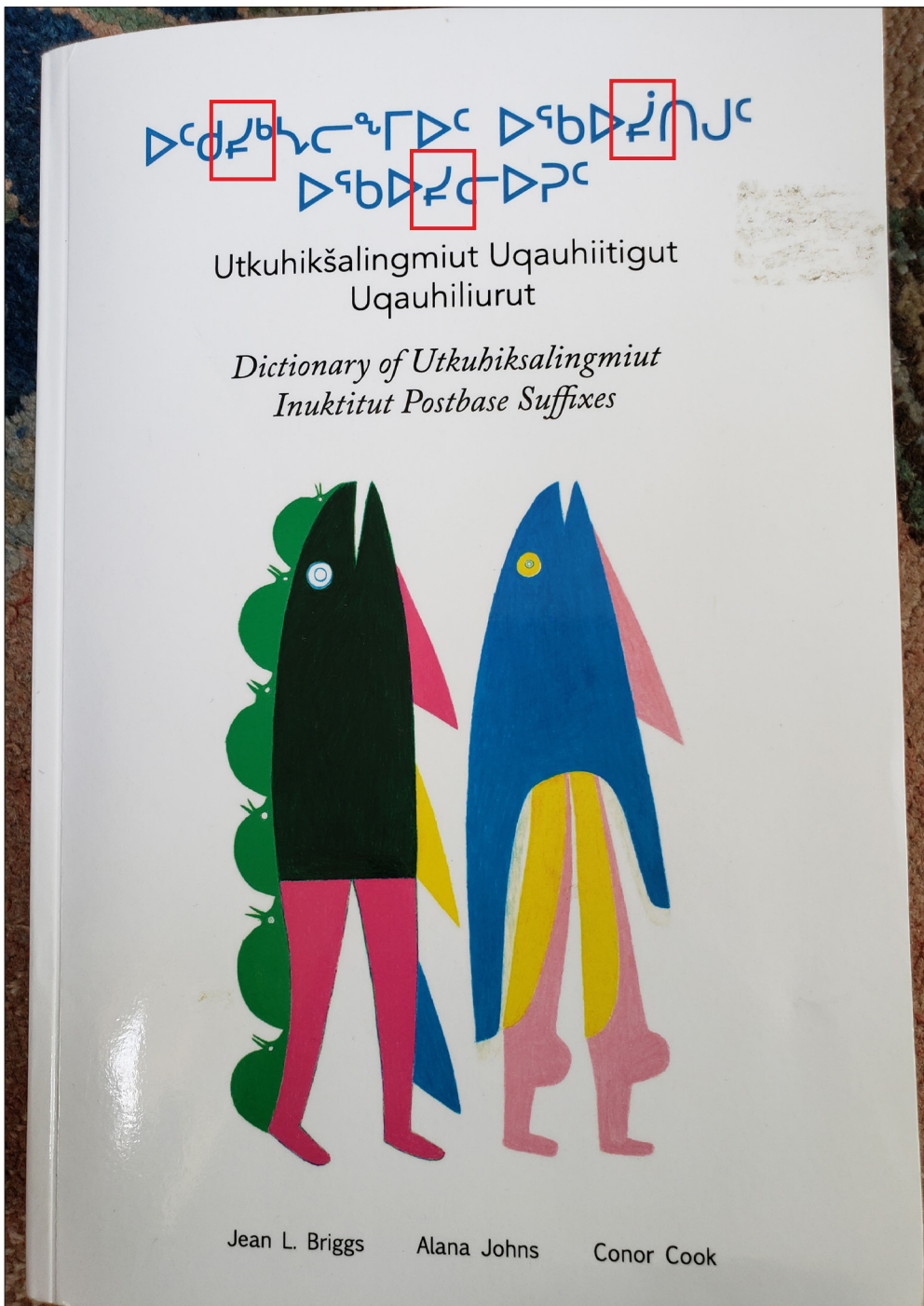


figure 4 The front cover of the 𐎠𐏁𐎠𐎠𐏁𐎠𐎠𐏁𐎠 𐎠𐏁𐎠𐎠𐏁𐎠 𐎠𐏁𐎠𐎠𐏁𐎠 / Utkuhiksalingmiut Uqauhiitigut Uqauhiliurut / Dictionary of utkuhiksalingmiut Inuktitut post-base suffixes, showing attestation for U+11AB0 𐎠𐏁𐎠 hi and U+11AB1 𐎠𐏁𐎠 hii.

From Briggs, Johns, Cook, Nunavut Arctic College Media, August 2015

6. Those are fish. (3+)	taapkuat iqaluit Ć<đ< Δ ⁶ ᑲᑲΔ ⁶
7. This is a mitt.	una pualu ᑲᑲ >ᑲᑲ
8. I see houses. (3+)	iglunik takuřunga Δ ⁶ ᑲᑲᑲ ᑲᑲᑲᑲᑲ
9. She is watching a musk ox.	umingmangmik tautuktuq ᑲᑲᑲᑲᑲᑲᑲᑲ ᑲᑲᑲᑲᑲᑲᑲᑲ
10.Those are telephones. (3+)	taapkuat hivajautiit/uqaluutiit Ć<đ< ᑲᑲᑲᑲᑲᑲᑲ / ᑲᑲᑲᑲᑲᑲᑲ
11.Those are sewing needles. (2)	taapkuak mitqutiik Ć<đ<ᑲᑲ ᑲᑲᑲᑲᑲᑲ
12.Do you hear birds? (3+)	tingmiarnik tuhaavit? ᑲᑲᑲᑲᑲᑲᑲᑲ ᑲᑲᑲᑲᑲ
13.He heard two ground squirrels.	hikřiingnik tuhaqtuq ᑲᑲᑲᑲᑲᑲᑲᑲ ᑲᑲᑲᑲᑲᑲᑲᑲ
14.Did you buy pens? (3+)	titirautinik niuviqpit? ᑲᑲᑲᑲᑲᑲᑲᑲᑲ ᑲᑲᑲᑲᑲᑲᑲᑲᑲ
15.Those are polar bears. (2)	taapkuak nanuuk Ć<đ<ᑲᑲ ᑲᑲᑲᑲ
16.Did you buy a fish?	iqalungmik niuviqpit? Δ ⁶ ᑲᑲᑲᑲᑲᑲᑲ ᑲᑲᑲᑲᑲᑲᑲᑲᑲ
17.Do you hear children? (3+)	nutararnik tuhaavit? ᑲᑲᑲᑲᑲᑲᑲᑲ ᑲᑲᑲᑲᑲ

Translate:

Answer

1. *What do you see?* *hat or mitt?*
 humik takuvit... naharmigluunniit, pualumigluunniit?
 naharmik takuřunga
2. *What do you hear?* *bird or child?*
 humik tuhaavit....tingmiarmigluunniit, nutararmigluunniit?
 nutararnik tuhaařunga
3. *What are you watching?* *caribou or muskox?*
 humik tautukpit.....tuktumigluunniit, umingmangmigluunniit?
 tuktumik tautuktunga

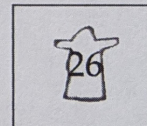


figure 6 Page 20 from *Inuit Uqauhingit: Nattilingmiutut/Atauhiq*, showing attestation for U+11AB0 ᑲ hi, U+11AB7 ᑲᑲ shrii, U+11AB4 ᑲ ha, and U+11AB5 ᑲᑲ haa.
 From Hadlari Consulting, version 3, 2012.

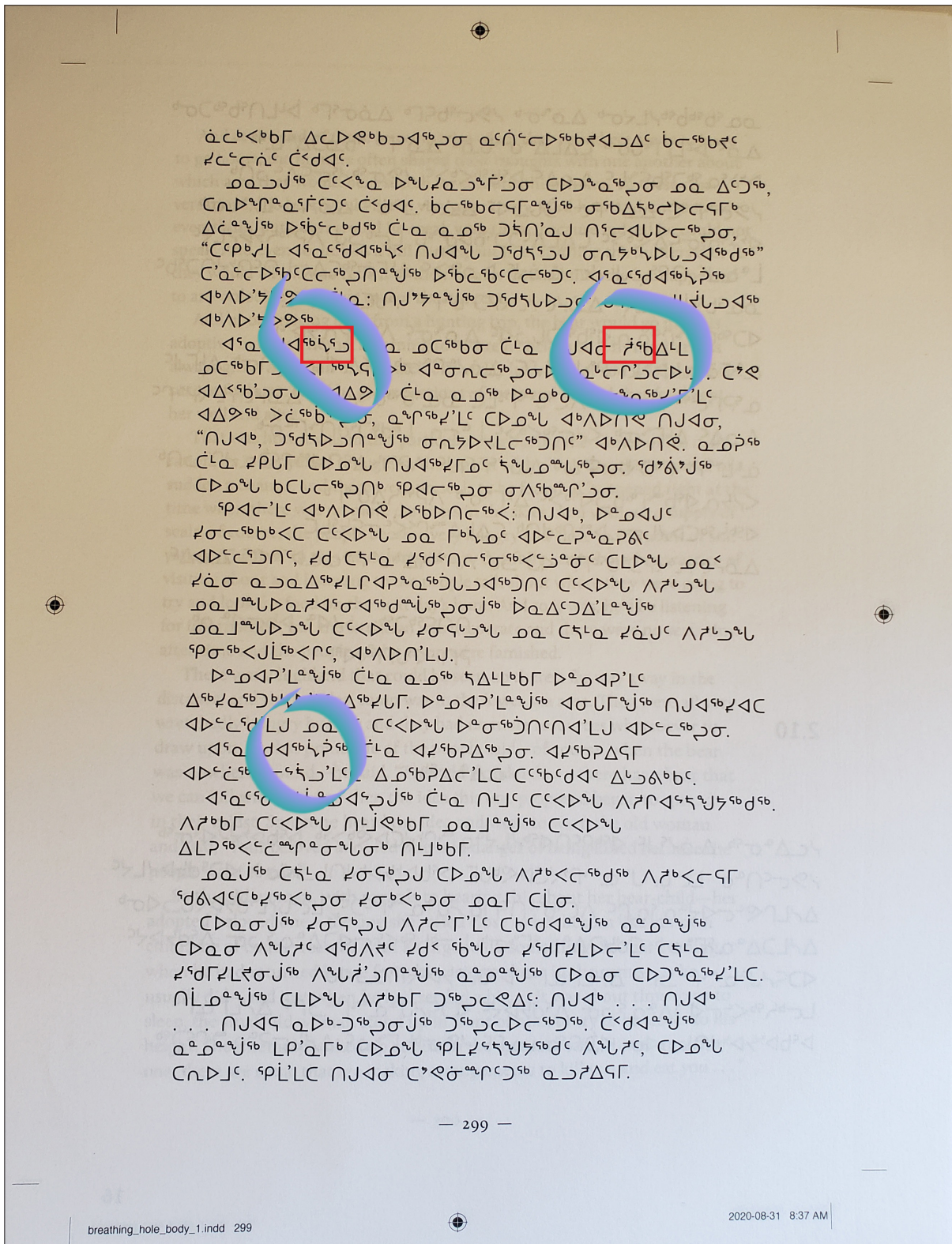


figure 9 Page 299 from the final proof copy of Janet Tamalik McGrath provided to the author for the upcoming play publication *The breathing hole / Aglu / ᐱᓄᓄ*, showing attestation for U+11AB3 ᓄ *shraa*, and ᓄ U+11AB3 *huu*.

From Arnatsiaq-Murphy, Murphy, and Tamalik McGrath, Playwrights Canada Press, publication September, 2020. <https://www.playwrightscanada.com/Books/T/The-Breathing-Hole>

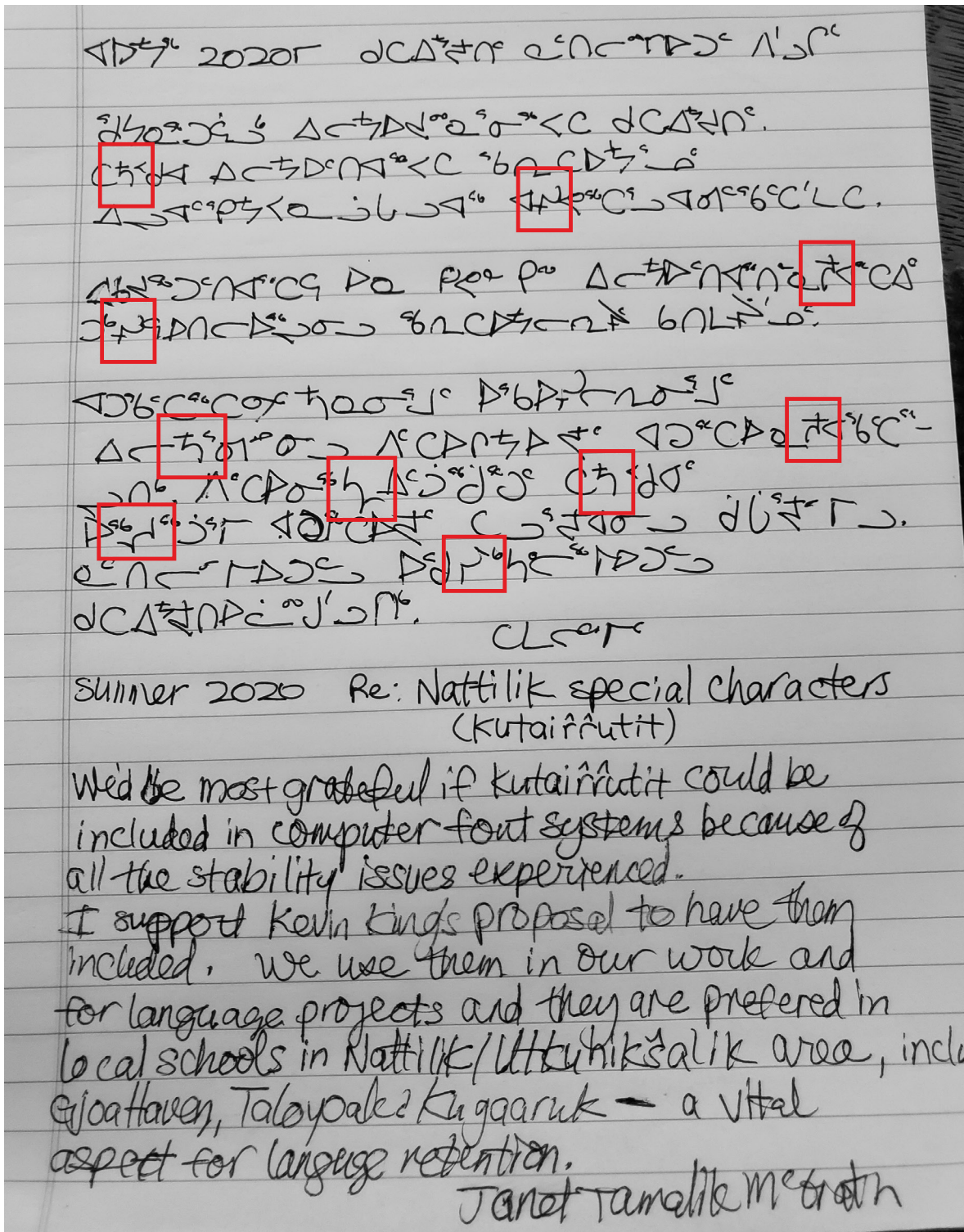


figure 11 A handwritten letter composed by Janet Tamalik McGrath, showcasing the Nattilik characters that are missing from UCAS. Showing U+11AB0 𐀀 hi, 𐀁 U+11AB2 hu, 𐀂 U+11AB4 ha, U+11AB6 𐀆 shri, U+11AB8 𐀈 shru, and U+11ABA 𐀊 shra, .

This letter also expresses the urgency from the community to have the missing characters encoded for language preservation purposes.

From email correspondence with Janet Tamalik McGrath, 'Letter, handwritten', Tuesday, 18 August 2020, 18:08 EST.

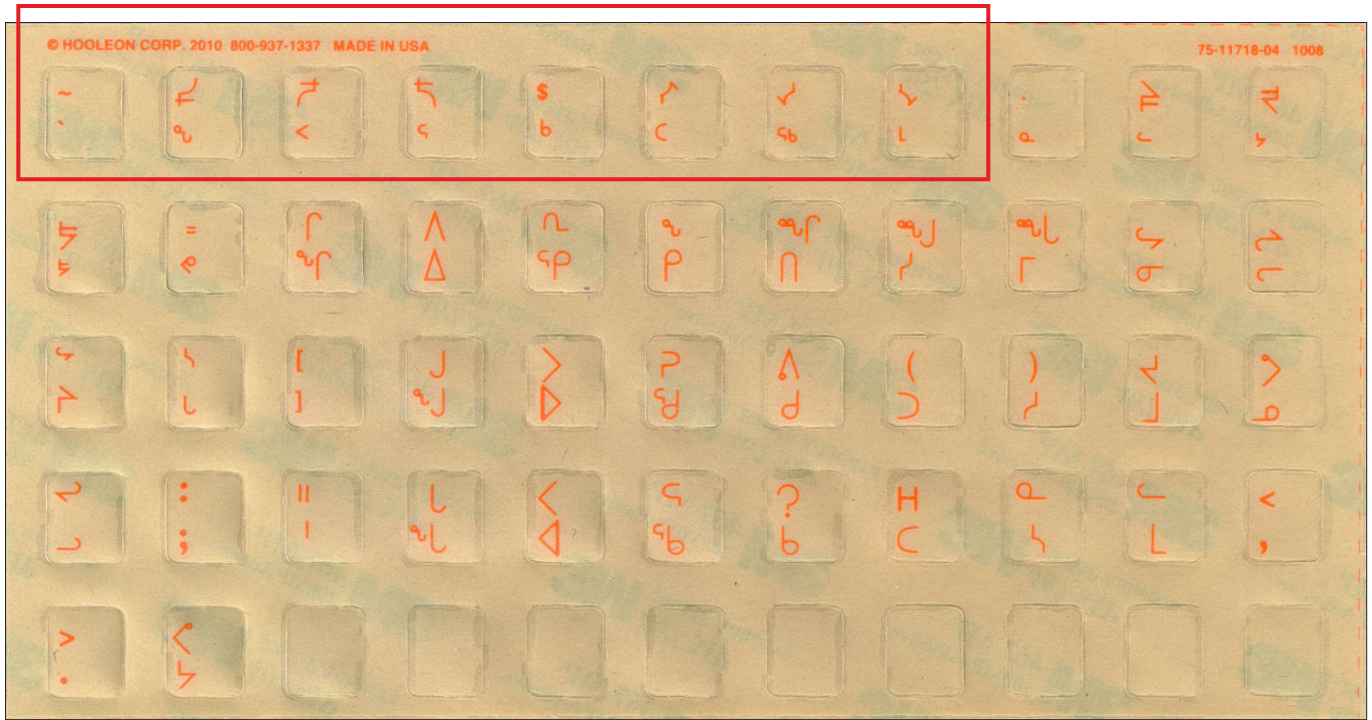


figure 13 A keyboard sticker printed by the Hooleon Corporation in 2010 for use by the Nattilik dialect community, showing attestation for U+11AB0 𐀀 *hi*, U+11AB2 𐀂 *hu*, U+11AB4 𐀄 *ha*, U+11AB6 𐀆 *shri*, U+11AB8 𐀈 *shru*, and U+11ABA 𐀊 *shra*.

This keyboard sticker was developed to be used with Euphemia CAS 2.9.2 and therefore also encodes the missing Nattilik characters in the Basic Multilingual Plane in the Private Use Area range of code points in Unicode. The above characters – including the long vowel characters – are encoded as U+E000 𐀀 *hi*, U+E001 𐀁 *hii*, U+E002 𐀂 *hu*, U+E003 𐀃 *huu*, U+E004 𐀄 *ha*, U+E005 𐀅 *haa*, U+E007 𐀇 *shri*, U+E008 𐀈 *shrii*, U+E009 𐀉 *shru*, U+E00A 𐀊 *shruu*, U+E00B 𐀋 *shra*, and U+E00C 𐀌 *shraa* within the PUA range.

Note that the above keyboard layout does not show superscripted final consonant forms for the *shr* and *h* series. It is confirmed by Elisabeth Jansen-Hadlari that the Nattilik dialect never uses the *h* or *shr* sounds as a final pure consonant in a syllable. Additionally, the *h* and *shr* sounds in Nattilik never occur at the end of a word in the language. Further evidence of this is provided in figure 3, showing the special Nattilik characters on page 13 in 𐀀𐀁𐀂𐀃𐀄𐀅𐀆𐀇𐀈𐀉𐀊𐀋𐀌𐀍𐀎𐀏𐀐𐀑𐀒𐀓𐀔𐀕𐀖𐀗𐀘𐀙𐀚𐀛𐀜𐀝𐀞𐀟𐀠𐀡𐀢𐀣𐀤𐀥𐀦𐀧𐀨𐀩𐀪𐀫𐀬𐀭𐀮𐀯𐀰𐀱𐀲𐀳𐀴𐀵𐀶𐀷𐀸𐀹𐀺𐀻𐀼𐀽𐀾𐀿 / *Utkuhiksalingmiut Uqahiiitigut Uqauhiliurut / Dictionary of Utkuhiksalingmiut Inuktitut postbase suffixes*. On the basis of this evidence and confirmation from the local community, finals for *h* and *shr* have not been proposed as additions to the uCAs range.

From Hadlari Consulting and Hooleon Corporation, 2010, and email correspondence with Elisabeth Jansen-Hadlari, 'more support materials', Monday, 31 August 2020, 19:00 EST.

Syllables for Cree and Ojibway

11ABC	Z	CANADIAN SYLLABICS SPE (figure 15)
11ABD	Σ	CANADIAN SYLLABICS SPI (figures 15, 16)
11ABE	N	CANADIAN SYLLABICS SPO (figure 15)
11ABF	И	CANADIAN SYLLABICS SPA (figure 15)

4 ADDITIONS FOR GENERAL CREE AND OJIBWE

There is an historical series formerly used by Cree and Ojibwe (referred to as Ojibway in the names list) communities that is being proposed for the purpose of scholarly documentation of historical texts in these languages. In James Evans's original Cree Syllabics orthography—published in 1841 in the *Swampy Cree Hymn book*—an *sp* series is shown at the final line of the chart. Evans's Syllabics orthography from the 1841 printing was used to print the Eastern Swampy Cree dialect of Northern Manitoba, however, he had worked previously with Ojibwe communities in central Ontario to develop an early version of the Syllabics for that language, before setting up a printing operation at Norway House, Manitoba in 1840 to print in the Eastern Swampy Cree dialect for the local community in this region. Furthermore, Ojibwe is noted as still retaining the *sp* sounds in the contemporary language, although using another method of representing *sp* in the contemporary Syllabics orthography.



Evans's Cree Syllabics chart from 1841 uses a now-archaic convention to mark long vowels, by which a slash was placed through the middle of a syllable character to differentiate long vowels from the base syllables. This practice was abandoned shortly after Evans's original printing work at Norway House in favour of the current practice of placing a diacritic—most often a dot—to mark a long vowel.

Syllables in this series are similar in appearance with certain existing characters of other encoded scripts, such as, U+005A LATIN CAPITAL LETTER Z, U+004E LATIN CAPITAL LETTER N, and U+0418 CYRILLIC CAPITAL LETTER I. The similarity is however coincidental, and the existing UCAS characters exhibit a strong precedent of not unifying Syllabics forms with other scripts based on graphical similarity. Therefore, dedicated UCAS characters for this series are still necessary.

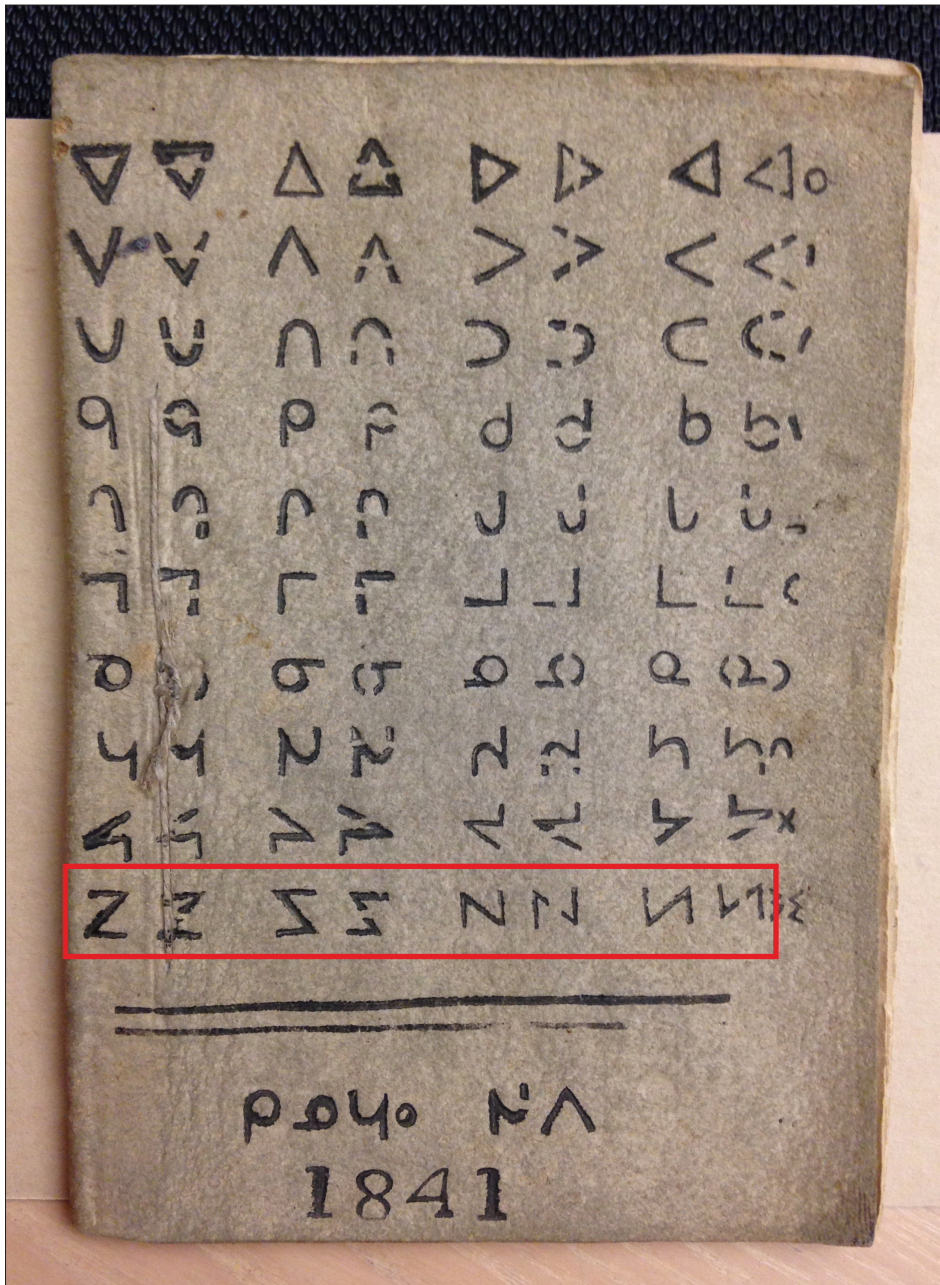


figure 15 The syllabary chart shown on the front cover of the *Swampy Cree Hymn book*, printed by James Evans in 1841 at Norway House, showing attestation for U+11ABC Z *spe*, U+11ABD Σ *spi*, U+11ABE N *spo*, U+11ABF V *spa*.

Note that in the above *sp* series showing in Evans's syllabary chart, the long vowel forms for all syllables are marked with a slash through the character for differentiation. Evans experimented with multiple practices for marking long vowel characters, including the creation of bold versions of the syllables. These practices—in particular the slash through a syllable character—were abandoned shortly after Evans' work in favour of the current practice of placing a dot diacritic above a syllable character to mark it as a long vowel. As a result, there are no useable text representations to attest the long vowel characters that this series would require (*spee*, *spii*, *spoo*, and *spaa*). Similarly, there is no attestation available for the super scripted final form for *sp* at this time, and thus it has not been proposed at this time for encoding into UCAS.

From Evans, 1841, in the James Evans Fonds, Victoria University Library, University of Toronto.

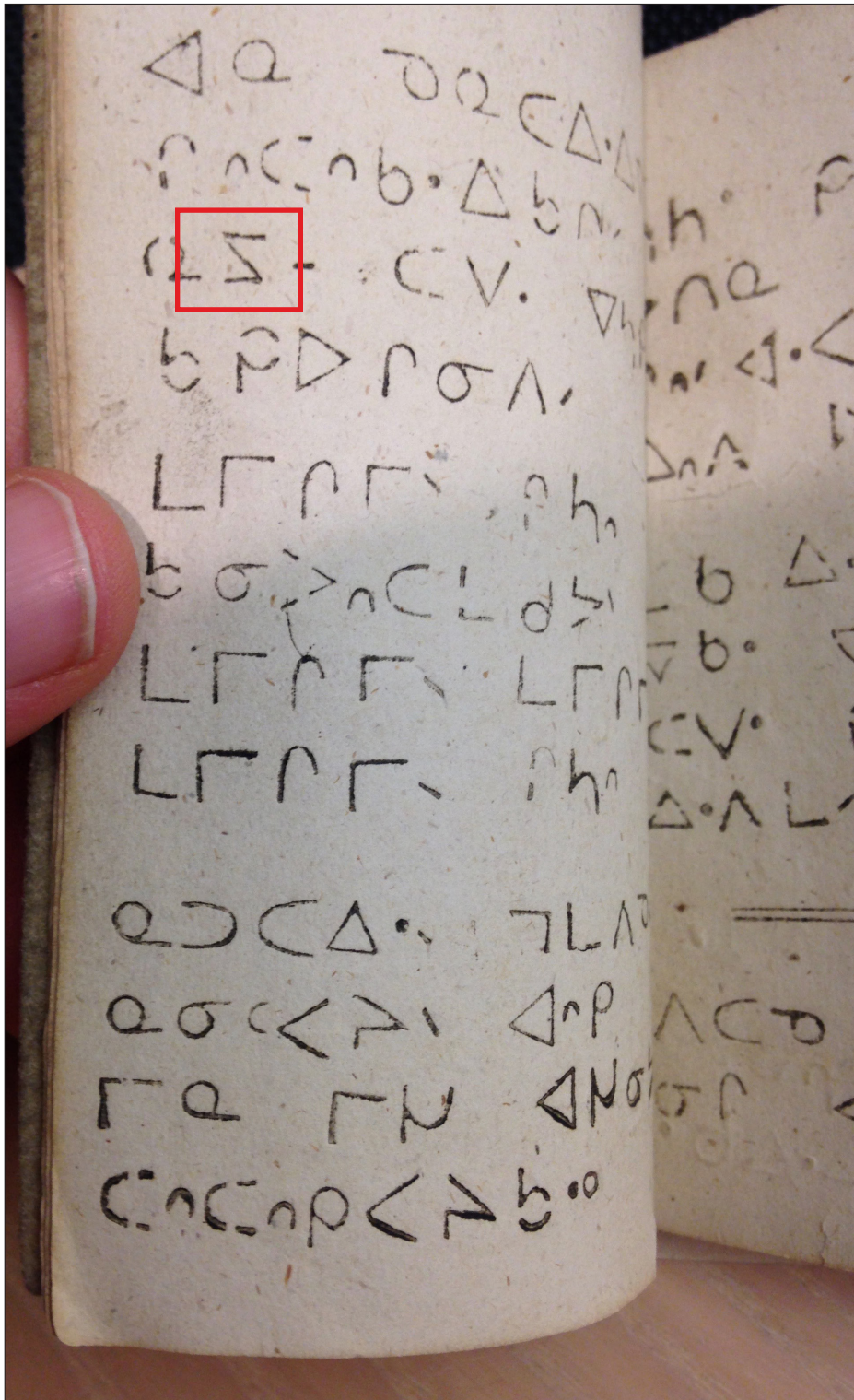


figure 16 The Algonquian syllabary chart shown on the front cover of the *Swampy Cree Hymn book*, printed by James Evans in 1841 at Norway House, showing attestation for U+11ABD Σ *spi*.

Note that the above example is the only instance of the *sp* series appearing in the *Swampy Cree Hymn book*. All other showings of the characters are depicted in the syllabary chart on the cover of the document (figure 15).

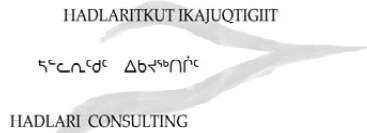
From Evans, 1841, in the James Evans Fonds, Victoria University Library, University of Toronto.

Appendix: Letters of support

The following section appends letters of support from the Nattilik user community that express further context towards the development of the syllabic characters that are being proposed as additions to UCAS in this document, as well as the need for having these characters encoded into the Unicode Standard.

Letter of support from Attima and Elisabeth Hadlari
Hadlaritkut Ikajuqtigiit/Hadlari Consulting
Dated 5 September 2020

1



September 5, 2020

The Unicode Consortium
P.O. Box 391476
Mountainview, CA 94039-1476
U.S.A.

This is a letter to support, applaud, and appreciate the proposal from Kevin King of Typotheque, for Unicode designation of the following Nattilingmiutut syllabic characters:
ᐱ ᐱ ᐱ ᐱ ᐱ ᐱ ᐱ ᐱ ᐱ ᐱ

We want to share a bit of background information so you can understand why unicode designation of those characters is so critical to literacy in Nattilingmiutut.

It was back in 2006 that we had been asked by Nilaulaaq, (a unilingual Nattilingmiutut speaking elder that had been the Inuit language teacher in the community of Tallurūuaq for many years) to help her organize, and eventually publish, her Nattilingmiutut word collection. This was a collection of words that she had been collecting over the many years she had been teaching her language in the schools as well as in her passionate efforts to preserve and promote the unique dialect of the Inuit language referred to as Nattilingmiutut, so her grandchildren and great-grandchildren could benefit from the rich heritage in-bedded in the language..

Upon seeing and exploring the collection with her, we were amazed at the sheer size of handwritten and hand typed collection. But to work with the collection we would need a audio file for every word. Nilaulaaq was writing in syllabics, which is a phonetic writing system, but the Nattilingmiutut dialect has more sounds than the ICI standardized syllabics system that she was using, allowed for.

Words written with a phonetic writing system can only be accurately pronounced if each symbol has a corresponding sound that is always pronounced the same, and there is a separate symbol for each sound. In the early 1970's when the Inuit met to develop a standardized syllabic writing system there had been no representation from the Nattilingmiutut speaking communities. (Nattilingmiutut speakers were among the last of the Inuit groups to move from nomadic camps into the more permanent structured communities that exist today.) The Inuit language has been passed on for thousands of

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years with absolute precision of sound, without any writing system that is known of. Now that it is being written, we feel it deserves to be written with the same precision. If a phonetic symbol represents more than one distinct sound, the person reading could guess a sound incorrectly and the meaning of the word could change.

In assisting Nilaulaaq with her collection we realized the very first step had to be to find a way to accurately write the words down. The most logical solution was to add the missing symbols. The Ikajuqtigiit Society, a non-profit organization, was formed in 2007 with the vision to keeping the language of the Nattilik communities strong and vibrant. Hadlari Consulting, our partnership, was contracted to implement the directives of the Society.

From 2007-2009 we travelled to communities discussing the various issues with spelling, and we spoke with teachers, professionals, families, youth and elders alike. We heard how they felt that when Inuit standardized syllabics for Nunavut, and realized there had been indeed no representation or input from Nattilingmiutut speakers.

We then began a ground roots exploration and testing system to create agreement on how to best represent the missing symbols for sounds of the language that have no character in Unicode. We sought out and worked with font developer, Tiro Typeworks, to create the community-agreed Nattilingmiutut symbols. Tiro Typeworks then put those into an updated Euphemia CAS (2.9.2) and created a special keyboard for users of the font to use, and they trained us in how to put the custom systems into our various operating platforms at the time. We distributed the font and keyboard through the mail using a data sticks that included the instructions for installation. This type of distribution was due to these being a custom font and custom keyboard, and Tiro could not distribute these on their website. When we developed a website, we could not distribute the font and keyboard that way either. A large part of having Nilaulaaq approach us in the first place, and being contracted by the Ikajuqtigiit Society, is due to the breadth and depth of Attima's oral expertise in the Nattilingmiutut dialect. We are an organization with strengths in the language and cultural sector, and dealing with technology and computers still remain part of our learning curve.

With that, we began using the Nattilik Kutaiřrutit font and keyboard in 2010 and putting the special font and keyboard pack into people's computers in the Nattilik area. This included teachers, professionals, and people generally interested. As well, we began publishing all our materials using the fonts and we distributed them widely through the three relevant communities and beyond.

We were rewarded with such a positive response from the Nattilingmiutut speaking communities, and especially the elders who often were moved to tears to see their language in print in a way that precisely matched their oral language. Comments often included how this was the first time they ever saw their language in print.

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qaritauiřatkut takugiarviat: www.hadlariconsulting.com



However, over the following ten years, we have found that there continue to be many complications arising from our so-called solution of a custom font and keyboard. The main issue is that in order to troubleshoot any issues, we needed people in each community that were able to work across platforms. As well, bandwidth is limited in these isolated communities, so if someone lost their custom font or keyboard or changed computers, they would have to wait for one of us to fly in – which was every few months. As well, with each new computer operating system, the steps for installing custom keyboards would change, and even we ourselves had to work hard to keep up to speed! It is simply not sustainable for our situation and with working against time to save our isolated dialect from having no adequate literary means. Twice since 2014 we have reached out to academics in the linguistic field to help us put together a proposal for Unicode inclusion of the missing characters and twice, after starting the process, the parties have had to bow out of completing the work, when they moved from their respective workplace positions.

Over the past twelve or more years, we have continued to collaborate closely with organizations and printing companies providing fonts so that Nattlik syllabics can continue to be commercially printed. We provided the Utkuhikšalik pose-base dictionary project a copy of the custom font and keyboard, and they successfully produced a very high quality resource in a dialect akin to Nattilingmiutut. We are presently in the process of publishing a Nattilingmiutut dictionary as an on-line version. People accessing data this way would be able to read the content, being pdf format, but, then not necessarily be able to input any of the terminology, unless the Nattlik custom font and keyboard are installed on their device.

The way we have gotten around the issues of Nattilik Kutaiřřutit characters not being in the Unicode collection, is by using pdf files. However, there are great limitations that stem from using only pdf files. For one, most people that use the Nattilik Kutaiřřutit font do not have enough computer training to create pdf's of their materials, in order to share. If they share as MS Word, the special characters default to little squares or other gibberish. As well, there is no capacity to type using email – and this is a common mode of communication in remote Arctic communities. The capital of Nunavut is 1400km away from the Nattilik area, and two days travel by plane-only.

The Government of Nunavut has funded the development of the Nattilik font, and supports its use for local initiatives. They are limited, though, in their own use of it for productions because the characters are not Unicode-stable. They cannot take on the extra steps that we in the community have been able to take on. However, even with all the extra effort on our part, we see how truly limited we are in our language preservation with all the technical glitches we do encounter. This time and energy could be directed more effectively to actual productions like more school curricula, community information materials, quality literary materials in a genuinely phonetic alphabet. All this is possible through Unicode's inclusion of Nattilik missing characters (Kutaiřřutit) to

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qaritauiřřatkut takugiarviat: www.hadlariconsulting.com



4

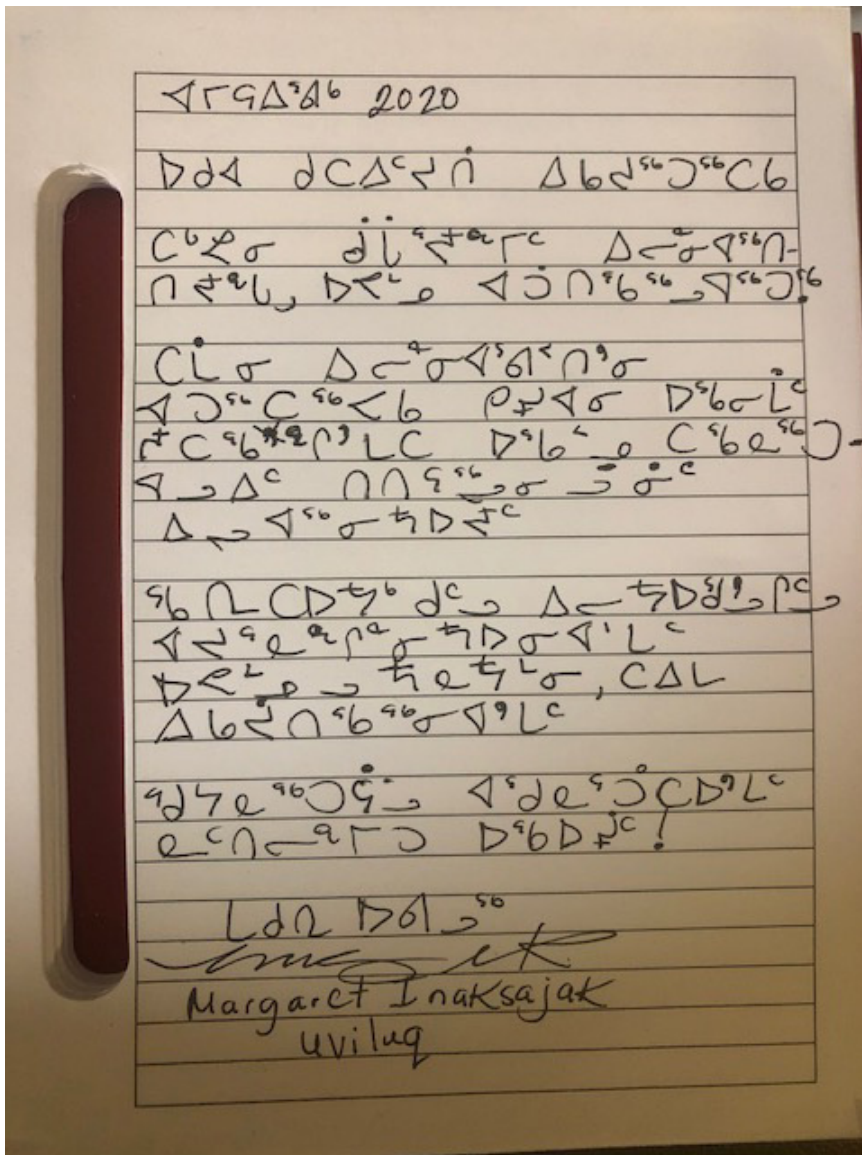
provide language and cultural professionals, teachers, health workers, translators a more stable system.

Thank you for reading this, and I am sure you can by now understand how much we appreciate and welcome Kevin King's proposal on our behalf. We appreciate his hard work to understand the extent of a) use of the characters, and b) the community support and demand. It is our experience that languages are more than the sum of their words; they feed the human need for identity and make connections with unique ways of thinking. We, like Nilaulaaq, wish to see this dialect remain strong and vibrant, and available for future generations to benefit from. Having a way to be literate can play a big part in that.

Attima and Elisabeth Hadlari
Hadlari Consulting,

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Translation of letter of support from Margaret Uviluq Inaksajaq, school teacher, Kuugaaruk (Kugaaruk) Nunavut. Contact info: maginuk@icloud.com

Amirairvik (month of pelts, i.e. September), 2020

I support the use of Kutaiřtitit.

As a teacher in the school here I have found them to be very helpful and useful in my work.

I use them in my every day lessons at school here but we have no curricula that employ their use. I have to adapt the printed materials by clarifying with spoken examples, and it is very tiring on my mouth to work like this. When we write anything, however they are very useful.

When they are accepted into Unicode for computers, it will lift away a lot of the issues I face professionally in my everyday work.

I am very appreciative of the efforts made in support of Nattilingmiutut dialect.

Margaret Uviluq Inaksajaq



The Unicode Consortium
P.O. Box 391476
Mountainview, CA 94039-1476
U.S.A.

September 15, 2020

Re: Nattilingmiutut Characters

To Whom It May Concern:

The Pitquhirnikkut Ilihautiniq/Kitikmeot Heritage Society (PI/KHS) is committed to the preservation of the unique dialects of Inuktitut. The PI/KHS has a policy that ICI standard orthography must be used in our language reclamation and revitalization work.

The PI/KHS is engaged actively in as a partner in the commemoration of Nattilingmiut heritage through the Arnaqarvik 50th year commemoration. Our organization has partnered with the Winnipeg Art Gallery to produce a world-class exhibition on Arnaqarvik for the opening of the new and national Inuit Art Gallery. The use of Nattilik specific syllabic characters will be essential to use in all documentation of the project. As the Executive Director of the PI/KHS I am a co-curator of the exhibit.

The PI/KHS recognizes that the Nattilingmiut dialect of Inuktitut is unique, and that all of its sounds are not currently represented in the ICI standard. I would like to communicate our full support for the development of Unicode Nattilik fonts to ensure the proper representation and preservation of the Nattilik dialect for future generations.

Regards,


Pamela Hakongak Gross

Executive Director

(t) +1 867 873 9337 (f) +1 867 873 9338 ichr.ca
P.O. Box 11050, Yellowknife, NT, X1A 3X7 | 3506 Macdonald Drive, Yellowknife, NT, X1A 2H1

ichr Institute for Circumpolar
Health Research

September 20, 2020

Kimberly Fairman
Executive Director

The Unicode Consortium
PO Box 391476
Mountainview, CA 94039-1476
USA

I am writing this letter in support of the proposal from Kevin King of Typotheque, for Unicode designation of Nattilingmiutut syllabic characters.

I am a Nattilingmiut research administrator active in community based research in the Circumpolar context. As an Indigenous person involved in Health Policy Research, I focus on broader understandings of wellness, complex underlying health disparities, and the interconnectedness of health with other sectors like education, social justice, and the environment. This research seeks to recognize a crucial element of language and identity as being aligned with these interests and is timely in its response to a clear historical oversight in knowledge, culture and way of life of the Nattilingmiut people.

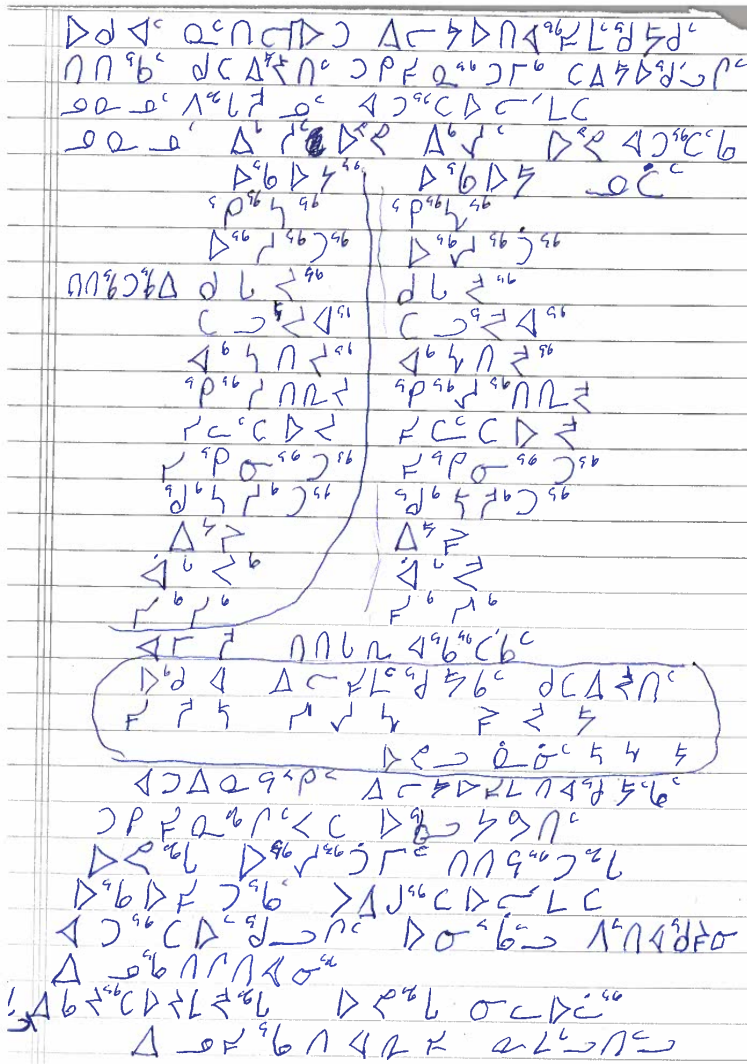
I am active with our Indigenous partners in knowledge translation and plain language communication of research findings. One of the pillars of this work is to represent findings in the language of the people who will benefit from this work. In doing so, we often discover similar situations where verbatim translation fail to convey the rich and nuanced understandings of the original languages of our people. We work hard to correct this but often the systems and practical tools we have are lacking. This project highlights the necessity of attention to detail and basic tools for literacy.

I also feel personally connected to this work as it is my native dialect and the new symbols help me reclaim my language, as well as have a means to write my own name which contains the symbol "hii". As a graduate student and research administrator, I would use the characters in my own work and this is very important to me, my family and our communities. The impact of this project touches on Indigenous reconciliation in a way that will impact exponentially on the areas I have mentioned previously.

Sincerely,



Kimberly Fairman
Executive Director



Translation of support letter from Nilaulaaq Aglukkaq, Inuk elder and language expert from Gjoa Haven, Nunavut. The letter was emailed from the school in Gjoa Haven, Nunavut via scan, September 22, 2020. She mention in her letter that she is available by phone, but no number given within the text. Her contact numbers are: (867)360-7103 (h) and (867) 445-6673 (c) A translator's note an a few clarifications are in [square brackets].

I fully support the inclusion of the Nattilingmiutut characters as they clarify the exact phonetic correlation [between text and speech]. The characters are actively used in the three Nattilik communities.

Here are some examples of how I use them regularly. The [left side] shows they way it is erroneously written using the current system, and the [right side] shows my usage. [translator's note: see lists]

As you can see, there are many words and terms that require these new symbols.

I request with urgency that the special characters are integrated into a stable system.

I use them very regularly so we need them to be reliable.

If you have any questions please call me in Gjoa Haven from where I write this.

Our older words and terms are being forgotten and they need to be in active use, as well as our many stories and legends that support our social structure and our ways of being in harmony with each other.

For this I plead your assistance. I am Nilaulaaq. I wish for you all a very good life and to have wellbeing.

[WIKIPEDIA], 'Canadian Aboriginal syllabics.' In *Wikipedia*, 12 August 2020, accessed 6 May 2020
[https://en.wikipedia.org/wiki/
Canadian_Aboriginal_syllabics#Round_and_Square](https://en.wikipedia.org/wiki/Canadian_Aboriginal_syllabics#Round_and_Square)

[WIKIPEDIA], 'Ojibwe writing systems.' In *Wikipedia*, 2020, accessed 6 May 2020
https://en.wikipedia.org/wiki/Ojibwe_writing_systems

REVEREND WOOLSEY, *Hymn book in Cree*. Royal Alberta Museum, Edmonton, 1859

Acknowledgements

The author owes much gratitude to Liang Hai for his technical support, feedback, and careful guidance throughout the entire process of this proposal's development. To Debbie Anderson, Roozbeh Pournader, and the entire Script Ad Hoc Group, for their helpful feedback and guidance towards the process of preparing a successful Unicode proposal document. To Janet Tamalik McGrath, for tirelessly working to provide information on and examples of the proposed additional Nattilik characters, and working with the community to provide letters of support. To Elisabeth and Attima Hadlari, for providing expert information regarding the proposed additional Nattilik characters to ensure accuracy in the proposal representations, and for working to develop early digital implementations of the Nattilik characters that led us to this point. To John Hudson and Ross Mills of Tiro Typeworks, for providing background information on the missing Nattilik characters' early developments in digital type, as well as for providing the first digital typeface and keyboard layout utilizing these characters. To the Victoria University Library, University of Toronto, for allowing the use of images taken by the author for inclusion in this proposal for the historical *sp* series. To Peter Bil'ak, for investing in the *Typotheque North American Syllabics* project, which made the investigation and eventual proposal of these characters possible.

Proposal summary form

**ISO/IEC JTC 1/SC 2/WG 2
PROPOSAL SUMMARY FORM TO ACCOMPANY SUBMISSIONS
FOR ADDITIONS TO THE REPERTOIRE OF ISO/IEC 10646¹**

Please fill all the sections A, B and C below.

Please read Principles and Procedures Document (P & P) from <http://std.dkuug.dk/JTC1/SC2/WG2/docs/principles.html> for guidelines and details before filling this form.

Please ensure you are using the latest Form from <http://std.dkuug.dk/JTC1/SC2/WG2/docs/summaryform.html>.

See also <http://std.dkuug.dk/JTC1/SC2/WG2/docs/roadmaps.html> for latest Roadmaps.

A. Administrative

1. Title:	<i>Proposal to encode 16 additional characters to the Unified Canadian Aboriginal Syllabics</i>
2. Requester's name:	<i>Kevin King</i>
3. Requester type (Member body/Liaison/Individual contribution):	<i>Individual contribution</i>
4. Submission date:	<i>30 September 2020</i>
5. Requester's reference (if applicable):	
6. Choose one of the following:	
This is a complete proposal:	<input checked="" type="checkbox"/>
(or) More information will be provided later:	<input type="checkbox"/>

B. Technical – General

1. Choose one of the following:	
a. This proposal is for a new script (set of characters):	<input type="checkbox"/>
Proposed name of script:	
b. The proposal is for addition of character(s) to an existing block:	<input checked="" type="checkbox"/>
Name of the existing block:	<i>Unified Canadian Aboriginal Syllabics</i>
2. Number of characters in proposal:	<i>16</i>
3. Proposed category (select one from below - see section 2.2 of P&P document):	
A-Contemporary <input checked="" type="checkbox"/>	B.1-Specialized (small collection) <input type="checkbox"/>
C-Major extinct <input type="checkbox"/>	D-Attested extinct <input type="checkbox"/>
E-Minor extinct <input type="checkbox"/>	F-Archaic Hieroglyphic or Ideographic <input type="checkbox"/>
G-Obscure or questionable usage symbols <input type="checkbox"/>	
4. Is a repertoire including character names provided?	<i>Yes</i>
a. If YES, are the names in accordance with the "character naming guidelines" in Annex L of P&P document?	<i>Yes</i>
b. Are the character shapes attached in a legible form suitable for review?	<i>Yes</i>
5. Fonts related:	
a. Who will provide the appropriate computerized font to the Project Editor of 10646 for publishing the standard?	<i>Kevin King</i>
b. Identify the party granting a license for use of the font by the editors (include address, e-mail, ftp-site, etc.):	<i>kevin@typotheque.com</i>
6. References:	
a. Are references (to other character sets, dictionaries, descriptive texts etc.) provided?	<i>Yes</i>
b. Are published examples of use (such as samples from newspapers, magazines, or other sources) of proposed characters attached?	<i>Yes</i>
7. Special encoding issues:	
Does the proposal address other aspects of character data processing (if applicable) such as input, presentation, sorting, searching, indexing, transliteration etc. (if yes please enclose information)?	<i>Yes</i>
	<i>Keyboard layouts (pages 17, 18) and transliteration (pages 5, 19)</i>
8. Additional Information:	
<p>Submitters are invited to provide any additional information about Properties of the proposed Character(s) or Script that will assist in correct understanding of and correct linguistic processing of the proposed character(s) or script. Examples of such properties are: Casing information, Numeric information, Currency information, Display behaviour information such as line breaks, widths etc., Combining behaviour, Spacing behaviour, Directional behaviour, Default Collation behaviour, relevance in Mark Up contexts, Compatibility equivalence and other Unicode normalization related information. See the Unicode standard at http://www.unicode.org for such information on other scripts. Also see Unicode Character Database (http://www.unicode.org/reports/tr44/) and associated Unicode Technical Reports for information needed for consideration by the Unicode Technical Committee for inclusion in the Unicode Standard.</p>	

¹ Form number: N4502-F (Original 1994-10-14; Revised 1995-01, 1995-04, 1996-04, 1996-08, 1999-03, 2001-05, 2001-09, 2003-11, 2005-01, 2005-09, 2005-10, 2007-03, 2008-05, 2009-11, 2011-03, 2012-01)

C. Technical - Justification

1. Has this proposal for addition of character(s) been submitted before? If YES explain	No
2. Has contact been made to members of the user community (for example: National Body, user groups of the script or characters, other experts, etc.)? If YES, with whom? If YES, available relevant documents:	Yes <i>Janet Tamalik McGrath, Elisabeth Jansen-Hadlari, Attima Hadlari, Miriam Nilaulaaq, et al</i> <i>See figures in section 3 and appendix</i>
3. Information on the user community for the proposed characters (for example: size, demographics, information technology use, or publishing use) is included? Reference:	Yes <i>See section 3 and appendix</i>
4. The context of use for the proposed characters (type of use; common or rare) Reference:	Yes <i>See section 3 and appendix</i>
5. Are the proposed characters in current use by the user community? If YES, where? Reference:	Yes <i>In Canada</i>
6. After giving due considerations to the principles in the P&P document must the proposed characters be entirely in the BMP? If YES, is a rationale provided? If YES, reference:	No
7. Should the proposed characters be kept together in a contiguous range (rather than being scattered)?	Yes
8. Can any of the proposed characters be considered a presentation form of an existing character or character sequence? If YES, is a rationale for its inclusion provided? If YES, reference:	No
9. Can any of the proposed characters be encoded using a composed character sequence of either existing characters or other proposed characters? If YES, is a rationale for its inclusion provided? If YES, reference:	No
10. Can any of the proposed character(s) be considered to be similar (in appearance or function) to, or could be confused with, an existing character? If YES, is a rationale for its inclusion provided? If YES, reference:	Yes Yes <i>The last paragraph of section 4</i>
11. Does the proposal include use of combining characters and/or use of composite sequences? If YES, is a rationale for such use provided? If YES, reference: Is a list of composite sequences and their corresponding glyph images (graphic symbols) provided? If YES, reference:	No
12. Does the proposal contain characters with any special properties such as control function or similar semantics? If YES, describe in detail (include attachment if necessary)	No
13. Does the proposal contain any Ideographic compatibility characters? If YES, are the equivalent corresponding unified ideographic characters identified? If YES, reference:	No