Interpreting the spreadsheets:

* First column: tag (e.g. left side of colon in stem list)
* Second column: initial variant (“initial”)
* Third column: variant after person prefix (“person”)
* Fourth column: variant after everything else (“elsewhere”)
  + Sometimes, these will be blank
* Fifth column: next continuation lexicon
* Sixth column: flag diacritics required (not super common)
  + Flags are given in quotation marks because excel doesn’t like @ so the quotation marks will need to be deleted
* (Sixth column: other notes)

To create FST stems for the “initial” list”:

* [column 6][ column 1 ]:[column 6][column 2]\t[column 5] ;

To create FST stems for the “person” list:

* [column 6][ column 1 ]:[column 6][column 3]\t[column 5] ;

To create FST stems for the “elsewhere” list:

* [column 6][ column 1 ]:[column 6][column 4]\t[column 5] ;

e.g. lines 189-190 of the animate nouns

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| iihtáíhksoohpattsaakio'pa | iihtáíhksoohpattsaakio'p |  | ohtáíhksoohpattsaakio'p | NA | "@R.person.NULL@" |
| iihtáíhksoohpattsaakio'pa |  | %^SPomohtáíhksoohpattsaakihp | ohtáíhksoohpattsaakihp | NA | "@D.person.NULL@" |

* These will result in four entries in the stem lists, one on the initial list, one on the person list, and two on the elsewhere list
* Initial:

@R.person.NULL@iihtáíhksoohpattsaakio'pa:@R.person.NULL@iihtáíhksoohpattsaakio'p NA ;

* Person:

@D.person.NULL@iihtáíhksoohpattsaakio'pa:@D.person.NULL@%^SPomohtáíhksoohpattsaakihp NA ;

* Elsewhere:

@R.person.NULL@iihtáíhksoohpattsaakio'pa:@R.person.NULL@ohtáíhksoohpattsaakio'p NA ;

@D.person.NULL@iihtáíhksoohpattsaakio'pa:@D.person.NULL@ohtáíhksoohpattsaakihp NA ;

Adding new stems to FST spreadsheets:

* These will often be identical
* If the diagnostic forms for a particular lemma do not give enough information, try to find related entries (e.g. another verb with the same initial morpheme)
  + If there are multiple allomorphs for the same position, create two lines for that form
  + If no other examples exist, assume that the person and elsewhere forms are the same, and make a note in the notes column that an assumption was made
    - E.g. could be explored in fieldwork
* Only encode irregular allomorphy
  + E.g. sometimes I deletes initially, sometimes it doesn’t; sometimes a form has different vowels depending on whether it’s initial or not; encode these types of allomorphy on a stem by stem basis
  + Do not encode glide deletion, etc. – e.g. yaak ‘future’ is always yaak, even though it essentially always surfaces as aak initially and following person prefixes
  + Be consistent with special characters: e.g. i2 is only relevant in the “elsewhere” column, but encode throughout
    - Exception being triggers like %^SP, which can occur only in the person column

Tag:

* The lemma/stem form in the dictionary (for easy comparison)
* If more than one entry, choose the one that seems to have the most information associated with it
* For prestems, use PS/[lemma]+

Initial:

* The form the morpheme takes at the beginning of a word

Person:

* The form the morpheme takes immediately following a person prefix

Elsewhere:

* The form the morpheme takes following any other morpheme

Lexicon:

* The next continuation lexicon
  + Will usually be the same as others of the same category, except for nouns that require -im

Flag

* If any flag diacritics are needed, put them here with quotation marks around them (because starting a cell with @ messes with excel)

Special characters:

* i2 – breaking i
  + diagnostic forms: check future tense or prefix ending in k, if k>ks, i2
* m2, n2, s2 – non-permanent consonants at the end of noun stems
  + diagnostic forms: check the plural, if the consonant deletes, it is a non-permanent consonant
* G – underspecified glide, used for prestems ending in (w/y) in the online dictionary or . in the paper dictionary (this also occurs for the final -oo, but this is managed using the diphthongization trigger for simplicity)
* y2 – a weird one, currently only used in yamoohk, which becomes i2amoohk in certain contexts (so far only know as after t); this will hopefully change with more research and analysis

Triggers: (only those relevant to the stem lists, not those that occur only in affixes)

* %^SP – short prefix
  + Use when person prefix surfaces as n, k, w, m
  + Stem should always begin in a vowel (not the best interpretation of Blackfoot morphology, but efficient)
* %^AIM – aa + im > aim (rather than aam)
  + E.g. ninaa vs imitaa
* %^DIPH – diphthongization
  + For specific stems, especially those ending in the final -oo ‘go’
  + In the dictionary backend, these can be determined by searching for ~ in the admin notes
  + Sometimes, diphthongization is assumed, e.g. when a verb derived from verb for which this is documented, include a note like “diph cf [other verb]”
    - If we don’t want to do this without evidence, remove diph where this note occurs
* %^3MM – 3mm verbs
  + Used when verbs surface with mm in the third person
  + Include the mm in the underlying forms, the rules delete rather than insert
* %^IC – initial change
  + Use when sV, ICV > sayV, CayV in initial position for past tense, imperative
* %^IMP – imperative it > (i)st
  + Use when initial it becomes (i)st in the imperative
  + (this trigger also occurs at the beginning of all imperatives in the lexc, to interact with IC or IMP as needed)

Katie’s system of assumptions/questions

* “assumed”
  + pers assumed (based on example for elsewhere) or vice versa, if both are assumed, the assumption is that the initial vowel holds across all three forms
  + for stems that begin in consonants that say i2 assumed, this is based on the frequency of i2 deleting initially
  + n2, s2 assumed: no plural example, but assumed based on the morphemes involved
* “unknown”
  + Could be i2, n2 but no evidence/related forms to check against, so not coded
* “cf [other entry]”
  + Allomorphy based on another stem, where form and meaning are clearly related
    - See that other stem for more information on assumptions/missing information
  + If followed by a question mark, the relationship between forms is less certain
* “VLV a?”
  + Could be a case of predictable variable length in vowels, but needs more research and hasn’t been modelled yet; where examples clearly show length variation this is hard coded
  + Sometimes it doesn’t match what it said about VLVs in the grammar (p.87-88), so “length variation but not predictable” are cases that don’t match
  + Sometimes initial w+short a surfaces as aa, noted as “lengthening?)
* “short prefix?”
  + Uncertain if possession takes short prefix
* “?” (just a question mark)
  + No related forms to check against or examples to show, especially used for stems that start in consonants, so their non-initial forms could do a number of things
* “imp only?”
  + Used for forms where a different initial form is exemplified, but only in the imperative diagnostic form
    - May simply be a way of demonstrating that both initial forms are possible (e.g. sometimes (i)C is shown in the diagnostic form for both or either the imperative or neutral 3rd person form), but this note indicates that the data is at least somewhat lacking
    - If the variation occurs with imp and neutral, disregard note
    - If imperatives Just Do Different Things Sometimes, which they seem to do, this may warrant some more modelling (e.g. flag diacritics and or/ interactions with %^IMP trigger?)
* “IC imp?”
  + Used when the past diagnostic form demonstrates the initial change past form, but the imperative does not
    - Modelling has thus far made IC optional for past tense, should it also be optional for imperative?
* “iiht or past?”
  + Unsure if word is exhibiting iiht/omoht/oht pattern, or if 3rd person form is just in past tense
  + Usually showing oht in imperative (unexpected), but omoht in person form (expected)
* “iiht/omoht/oht”
  + Unsure if form should consistently show this frequent allomorphy or if things have been regularized (both patterns could coexist?)
* “past?”
  + s-initial stems that otherwise display s connection sometimes show the third person form with is; could be an alternative initial form, or a shortened past tense ii
    - if past, we can delete these lines
    - if initial variation, keep things as they are
  + y-initial stems – even more likely to be past tense?
* “impersonal?”
  + Tried to mark VAIs where person really shouldn’t happen (not so much for animal terms, but for weather/other environmental phenomena)
    - Might be a good place for flags in the future
* “final?”
  + Appears to be a final rather than a stem that could occur on its own
  + Either should not be included, or needs to require a prestem (e.g. no initial or person form)