



NATIONAL ENDOWMENT FOR THE

Humanities

DIVISION OF PRESERVATION AND ACCESS

Narrative Section of a Successful Application

The attached document contains the grant narrative of a previously funded grant application. It is not intended to serve as a model, but to give you a sense of how a successful application may be crafted. Every successful application is different, and each applicant is urged to prepare a proposal that reflects its unique project and aspirations. Prospective applicants should consult the Documenting Endangered Languages application guidelines at <http://www.nsf.gov/pubs/2011/nsf11554/nsf11554.pdf> for instructions.

Note: The attachment only contains the grant, not the entire funded application. In addition, certain portions may have been redacted to protect the privacy interests of an individual and/or to protect confidential commercial and financial information and/or to protect copyrighted materials.

Project Title: Potawatomi Documentation, Lexical Database, and Dictionary

Institution: University of Wisconsin-Madison

Project Director: Monica A Macaulay

Grant Program: Documenting Endangered Languages: NEH-Preservation and Access

Potawatomi Documentation, Lexical Database, and Dictionary (POT)

Project Summary

1. Project Background and Goals. Potawatomi, also known as Neshnabémwen, is a critically endangered Algonquian language spoken primarily in the midwestern United States. Estimates are that 15 or fewer fluent native speakers of this language remain, all in their 70s and 80s. The goals of this project are (a) documentation and preservation of the Potawatomi language, and (b) the compilation of a database of lexical materials from which will be published (in hardcopy and electronic format) a bilingual dictionary of the language. This collaboration between community language activists and linguists will be intended primarily for Potawatomi language teachers and learners, but will also be useful to linguists, especially those interested in comparative and historical Algonquian. This kind of project is urgently needed as part of a larger program of language documentation, preservation, and revitalization.

2. Intellectual Merit. Many attempts at lexical documentation of Potawatomi have been made over the years (and centuries); this project will for the first time bring all of those resources together, supplementing them with additional fieldwork with the last first-language speakers. The dictionary which will be produced will be of interest and use to professional linguists, providing a valuable lexical database which can be used for comparative research. The web-based version of the dictionary is envisioned as containing much richer data than the hard-copy version, and thus the web-based version will be the most useful to scholars. It will contain, for example, derivational analyses of words, underlying forms, etc. Potawatomi is polysynthetic, with very complex verbal morphology, grammatical animacy, inverse person-number marking, and obligatory as well as stylistic obviation. Data from Potawatomi have figured prominently in numerous works on theoretical morphology, and the presentation of inflectional forms (especially of verbs) will contribute to that scholarly dialogue.

3. Broader Impacts. This project is a collaborative effort between researchers and the Forest County Potawatomi. It is the first project to be undertaken under the auspices of the Indigenous Languages Preservation and Promotion branch of the Center for the Study of Upper Midwestern Cultures (CSUMC), and creates a partnership between the University of Wisconsin and the Potawatomi Nation. It serves as a model of endangered language documentation that is of benefit to and has the full participation of both the language community and the scientific community. Because of the level of community involvement we have a clear focus on products that will be of immediate benefit to language revitalization. The elder fluent speakers are active in choosing dictionary entry formats that are clear and intuitive to them, and the participation of younger community language activists ensures that the dictionary and any other materials developed will be tailored to the needs of language learners.

This is the first dictionary project to be undertaken using the template developed for the Menominee Dictionary project (with NSF and NSF-DEL funding), and it is hoped that this will serve as an illustration of how the template can be transferred and adapted to other dictionary databases. The goal is for this template to serve as a general model for dictionaries of Algonquian and other languages.

Potawatomi Documentation, Lexical Database, and Dictionary (POT)

Project description

1. Project Background and Goals

Potawatomi, also known as Neshnabémwen, is a critically endangered Algonquian language spoken primarily in the midwestern United States. The goals of this project are (a) documentation and preservation of the Potawatomi language, and (b) the compilation of a database of lexical materials from which we will publish (in hardcopy and electronic format) a bilingual dictionary of the language. This collaboration between community language activists and linguists will be intended primarily for Potawatomi language teachers and learners, but will also be useful to linguists, especially those interested in comparative and historical Algonquian. This kind of project is urgently needed as part of a larger program of language documentation, preservation, and revitalization.

At the height of the Potawatomi's historical influence and geographic spread in the late 18th century, there were as many as 10,000 speakers in villages surrounding Lake Michigan. However, war and disease along with the government policies of removal, boarding schools, and relocation took their toll, and most speakers have since shifted to English. In 1977 the Ethnologue estimated that approximately 500 speakers remained among the several Potawatomi reservations. In the mid-1990s, the Potawatomi did a speaker survey and determined the number to be 50 (Potawatomi Language Institute, 1995). The same survey repeated about ten years later found the number to be only 25 (Hannahville Indian Community, 2003), with the average age of speakers 78. From talking with fluent elders today, the estimate is that at most fifteen of these speakers remain, and they are all in their 70s and 80s at this point. It is clear, then, that we are now presented with the very last chance to document fluent native speakers of this language.

The known speakers are distributed as follows: there are eight speakers left among the Forest County Potawatomi (FCP; Wisconsin), about five speakers among the Prairie Band (Kansas), and possibly a few speakers among the other bands. Because of this distribution, all of the bands rely on the speakers from Forest County, who provide a great deal of the language content for the bands' projects. (The minor dialect differences between the bands are primarily lexical, and they are not extreme enough that this arrangement confuses learners.)

All of the Potawatomi bands are aware of the critical state of the language, and are actively involved in language revitalization. For example, in Forest County native speakers Jim Thunder and Bill Daniels hold community classes for children and adults, and are working on written and audio documentation. The four bands in Michigan are working on curriculum projects and also hold classes for children and adults. The Citizen Band in Oklahoma is doing similar work including on-line classes. The Prairie Band in Kansas is focusing their efforts on training teachers in immersion-style teaching methods for use with children. All of the bands participate in an annual Potawatomi Language Conference each August. Projects currently being considered by participants include video-conference classes taught by Forest County speakers and

internships in which younger people from other bands spend summers doing language revitalization work in Forest County. All of the projects are in need of materials, and will greatly benefit from a dictionary in their language retention efforts. Thus, although the present project takes a focus on Forest County Potawatomi as its starting point, it will benefit the entire Potawatomi Nation, with an estimated total membership of 35,850.

Funding will support fieldwork and other activities relevant to recording, documenting, and archiving Potawatomi language data, with the dictionary as a final product. Digital audio and video recordings will be made of field sessions with native speaking elders. Details appear below and in the attached budget and budget justification.

2. Sources of Data

In addition to the three native speakers with whom we are working, there are numerous written sources that can be mined for lexical data. Most of the materials have been acquired and digitized, but for the most part the forms they contain have yet to be verified with the native speakers.

Among these written sources, however, there are virtually no published dictionaries or grammars that are available for use by linguists and local language communities. The most extensive and best-known works on the language are Hockett 1939 and 1948. These articles form the basis of most of the scholarship on Potawatomi, but are written in an approach which is completely opaque to those without linguistic training. The Wisconsin Native American Languages Project (WNALP, under the direction of John Nichols) produced some teaching materials and a vocabulary that are in use today, but the vocabulary is only 34 pages. There are in addition several unpublished dictionaries and grammars that were created in the early nineteenth century by two missionaries, Christian Hoecken and Maurice Gaillard. None of their writings are generally accessible, however. The most recent work on the language has been done by one of the co-PIs, Dr. Welcher, including her (unpublished) dissertation and several published papers.

In what follows we note some of the most important reference and other materials which will be used in the dictionary project, along with comments on their content and – especially in the case of older manuscripts – acquisition and digitization status.

- Welcher, Laura. Various dates. Field Notes, Recordings, and Database. The database contains approximately 2,000 lexical entries, including some complete paradigms, and has been incorporated into our test database.
- Daniels, Billy Jr. and Mary Daniels. 1976. *An Introduction to Wisconsin Potawatomi*. John Nichols (ed.). Wisconsin Native American Languages Project (WNALP). Milwaukee: Great Lakes Intertribal Council. Includes vocabulary that will be added to the database. These materials form the standard for the contemporary orthography; they have been acquired but not yet digitized.
- Hockett, Charles. 1932-1940. Fieldwork materials. Four handwritten notebooks of stories (most of which have been glossed and translated by Welcher) and over 3,000 handwritten cards with lexical data. Acquired and digitized.

- Shepard, Daniel. 1929. *Prairie Potawatomi Word Lists*. Seventeen pages of vocabulary organized by topic. Acquired, digitized, and entered in our test database.
- Skinner, Alanson. 1920-1927. *Prairie Potawatomi Word Lists*. Four pages of vocabulary organized by topic. Acquired, digitized, and entered in our test database.
- Gailland, Maurice. 1868. *Grammar of the Potawatomi Language*. Jesuit Missouri Province Archives, Reel no. 47, Jesuit Catalog no. NA11. Vatican Film Library, St. Louis University. A digital scan of this material has been acquired, and it contains a significant amount of vocabulary.
- Bourassa, Joseph N. 1843. *A Vocabulary of the Po-Da-Wahd-Mih Language*. Ms. Archived at the Pequot Museum in Connecticut; digitization underway at our request.
- Gailland, Maurice. n.d. *A Complete Dictionary of the Potawatomi Language*. Jesuit Missouri Province Archives, Reel no. 47, Jesuit Catalog no. NA16. Vatican Film Library, St. Louis University. 430 handwritten pages of lexical items. A digital scan of this material has been acquired; the quality is quite good.
- Unknown. n.d. *Walpole Island Glossary*. An approximately 2,200-word vocabulary list in contemporary orthography. Acquired and digitized; good quality.
- Unknown. n.d. *Pottawatomi Word and Phrase Book*. Jesuit Missouri Province Archives, Vatican Film Library. Jesuit Catalog number SNA8. St. Louis University. 700 pages of lexical items. A digital scan of this material has been acquired; the quality is not very good, but it is usable.

In addition, some of the participants in the project have personal collections of materials (stories, lexical items, etc.) which will be included in our database, e.g.:

- Thunder, Jim. Lexicon, grammar, and language lessons, including a 12-page manuscript on plant and medicine names and related terminology. Collection contains an estimated 1,700 lexical items. Acquired and digitized.
- Wensaut, Kim. Various materials. Contains an estimated 6,000 lexical items, in stories, workbooks, and word lists (some overlapping with the above). To be digitized.

Thus the project has an extensive body of materials from which to start, including all of the major collections of Potawatomi field notes and lexical data. It is clear from this list, however, that the materials that exist are primarily raw materials; this will be the first attempt to pull them all together into a single database, from which a comprehensive dictionary will be built.

3. Project Staff and Roles

Primary Investigators:

- Monica Macaulay, co-PI (University of Wisconsin, Madison)
Database design, fieldwork, data analysis / supervisory duties / reporting
(See biographical sketch.)
- Laura Welcher, co-PI (The Long Now Foundation)
Archival standards, metadata, fieldwork, data analysis / reporting

(See biographical sketch.)

Field Research and Dictionary Data Entry:

- Tammy Goss (University of Wisconsin, Madison)
field research / transcription / dictionary data entry / project management

Tammy Goss is a graduate student at the University of Wisconsin-Madison. Ms. Goss received her B.A. in American Indian Studies at University of Wisconsin-Eau Claire and she is currently working on an interdisciplinary Ph.D. under the title *Endangered Languages Preservation and Promotion*. She worked on documentation of the Ojibwe language for several years, and has worked as a project assistant on Professor Macaulay's Menominee dictionary project. She is familiar with all aspects of that database and created the test database we are using in our pilot. Ms. Goss also teaches Native American history at Madison Area Technical College.

- Kim Wensaut (Forest County Potawatomi)
field research / transcription / dictionary data entry

Kim Wensaut is an enrolled member of the Forest County Potawatomi Tribe. She works as a consultant for the Potawatomi Cultural Center, Library and Museum to develop and manage the library collection. Ms. Wensaut has been working on Potawatomi language preservation since 1996, helping to create and publish three sets of language manuals and accompanying tapes with Jim Thunder, Sr. She has served as a Language Teacher at Hannahville (MI) Indian Community School (K-12) and for the Pokagon Band of Potawatomi in lower Michigan (adult community classes). She has presented workshops on the language at all six of the Annual Potawatomi Language Conferences since 2003. She also serves as Community Faculty for Nicolet Community College in Rhinelander, teaching a course in Native American Literature. Ms. Wensaut holds a B.A. in American Indian Studies (University of MN) and an M.A. in English Literature (Central Michigan University).

- Lindsay Marean (Citizen Band Potawatomi)
field research / transcription / dictionary data entry

Lindsay Marean is an enrolled member of the Citizen Potawatomi Nation in Oklahoma. Ms. Marean earned her MA in linguistics from the University of Oregon in 2004, and worked as a curriculum consultant and teacher trainer for Nüümü Yadoha, an indigenous language revitalization program based in Bishop, CA, for two years. Currently she works as a practical linguist for the Pakanapul Language Team (Tübatulabal) in Mountain Mesa, CA. She has been studying Potawatomi on her own and from available fluent speakers in Kansas and Wisconsin for several years.

- TBA (Undergraduate at University of Wisconsin-Madison; we are hoping that we will be able to find a Potawatomi student to work with us)

data entry / keywords / archiving / maintain data integrity / index and edit audio and video files / digitization of texts / creating and maintaining metadata / maintaining internal website / copying materials / etc.

Fluent Native Speaker Consultants:

The following fluent native speakers of Forest County Potawatomi are the primary language consultants for the project. Each has a great deal of experience in community language education and materials development, and is enthusiastic about participating in the project.

- Jim Thunder
- Mary Jane Thunder
- Bill Daniels

Technical Consultant:

In addition, as indicated in our budget, we will need to hire a computer consultant to create, populate and administer an SQL database. Some additional database programming will be necessary to address issues pertaining to nonstandard character sets (collation, etc). The consultant will need to utilize a variety of scripting languages to manipulate and interact with the data and to make the data accessible via electronic means. The consultant will also need to be familiar with an ODBC-enabled front-end like Microsoft Access which will be used by the linguists and others as the primary means of data entry and by the technical consultant to generate hard copy reports and other representations of the data. Finally, the consultant will need to be able to provide general technical support on all of the technologies used.

4. Plan of Work and Project Timeline

A. Plan of Work: The project is being coordinated between members of the Forest County Potawatomi Band and Citizen Potawatomi Nation, and linguists from the University of Wisconsin-Madison and the Long Now Foundation (San Francisco). The Forest County Potawatomi Cultural Center, Library and Museum has given its support to the project (see Appendix for letter of support), with all rights to final decisions over content and form being reserved for the fluent-speaking elders, and copyright going to the tribe.

The dictionary will be modeled on a template developed for the Menominee dictionary that Professor Macaulay has developed (see §6). It will consist of an Access database with table structures located on a server in a postgresSQL format. This format will allow us to store the data securely, and allows multiple authorized users at different locations simultaneous access to the data. We can continually refine the database as new needs are identified, and each new version can be put up on the server for the users to download. Using this template allows us to skip the very time-consuming process of developing a novel structure for the dictionary database. Menominee is related to Potawatomi (both are Algonquian languages), and shares many grammatical features. At the same time, though, the structure of the database allows us the

flexibility to make modifications in ways that reflect unique aspects of the Potawatomi language (such as the extensive vowel syncope, not found in Menominee).

B. Time Frame: Preliminary work is already underway; we are compiling and organizing the existing materials, and have begun work on the design of the database. In what follows, we have divided our activities and objectives into four stages (the last three of which would correspond to the period of the grant):

Now-May 31, 2010 (pilot phase): We have received a grant from the Endangered Language Fund for computer equipment, and have started testing database design. We have been meeting and discussing the project since January of 2009, and have already made a great deal of progress. Some of our objectives for this year are:

- Finalize decisions on what fields will be included in the database for words in the dictionary.
- Finalize decision on the form of the headword (see below for discussion).
- Do preliminary design and set-up of the database for the project (a test draft has already been completed).
- Train Ms. Marean and Ms. Wensaut on use and functioning of the database.
- Finalize protocols for how information is to be handled (e.g., for spiritual and taboo words) and for access to information while the project is underway. (A draft of this has been completed.)
- Create list of sources to be included in the database and codes for how each will be referenced in the database.
- Create the style guide. Establish standardized protocols for every part of an entry (e.g., what form is to be entered as headword, how and where to enter inflected forms of words, how to enter examples, how to enter and format keywords, etc.).
- Make decision on representation of dialect differences (e.g., how they should be entered and whether and in what format they will be included in the final version of the dictionary).
- Do preliminary data entry. This can be done in any format and is not dependent upon our database being ready – as long as the format used is exportable we can move the data into the project database when it is complete. This will allow project participants to be entering data all along.
- Continue to track down and get digital copies of manuscripts and other documents on the language.
- Begin to transcribe Dr. Welcher's field recordings and mine them for lexical data.
- Decide metadata protocols.
- Hold in-person project meeting in Forest County (in addition to frequent email meetings).

June 1, 2010-May 31, 2011 (Year 1 of funded project): The goal for the end of the year will be to produce a small sample dictionary in hard-copy format with the materials entered so far. Doing this will help us to ask the right questions about what needs to be done in the following year. We will circulate it among Potawatomi language teachers and learners from all of the bands, and among linguists for suggestions. Some of our objectives for this year are:

- Hire and train computer consultant and undergraduate student assistant.

- Computer consultant will take us from small test database to the real thing, with all of its associated tables, etc.
- Make final decision on type of digital recorder to purchase (note that we have access to very good video equipment through UW-Madison, so will not purchase that).
- Ms. Goss and Ms. Marean will make trips to Forest County to work with the speakers; they will transcribe recordings and do data entry of material from those trips, including creation of sound files of words and example sentences.
- Continue to do data entry from written materials.
- Develop protocol for cross-referencing entries.
- Create master list of abbreviations for inflected forms.
- Begin compilation of morpheme database for use in derivational analysis of words.
- Hold annual in-person project meeting in Forest County (in addition to frequent email meetings).

June 1, 2011-May 31, 2012 (Year 2 of funded project): In the second funded year, much of the work will be the same as it was in the first year. We will also begin work on the form and programming for the electronic version of the dictionary. We will be able to use the on-line Menominee Intermediate Dictionary (which is almost completed as of this writing) as a basis for the programming, but undoubtedly a certain number of changes will be needed (both due to differences between the languages, and to possible differences in the desired functionalities). Some of our other objectives for this year are:

- Begin work on derivational analysis of words (filling in root, medial, and final fields).
- Begin to organize more systematic checking for missing words (e.g. if we have one form of a verb, see if form in opposite animacy exists).
- Computer consultant will focus on electronic version of dictionary while continuing to maintain and fine-tune database.
- Continue to make trips to work with the speakers; transcribe recordings and do data entry of material from those trips, including sound files of words and example sentences.
- Continue with data entry from written materials.
- Incorporate suggestions made by language teachers and learners.
- Hold annual in-person project meeting in Forest County (in addition to frequent email meetings).

June 1, 2012-May 31, 2013 (Year 3 of funded project): The goal for the end of this year will be publication of the hard-copy dictionary and finalization of the electronic version. Some of our objectives for this year are:

- Create front matter for the dictionary; e.g., write preface and introduction, including acknowledgment of all participants.
- Create appendices to the dictionary, e.g. a selection of verb paradigms.
- Create pronunciation guide for written and electronic versions.
- Create directions on how to use the electronic version.
- Continue to make trips to work with the speakers; transcribe recordings and do data entry of material from those trips, including sound files of words and example sentences.
- Continue to do data entry from written materials.
- Continue to do derivational analysis of words.

- Hold annual in-person project meeting in Forest County (in addition to frequent email meetings).

5. Sample materials

A. Database: We have discussed the fields to include in the database (taking those in the Menominee database as a starting point) and have created a test version. We include here screenshots of the form which will be used for data entry (note that this is the form which contains all of our fields; for ease of manipulation smaller forms can be created with only certain fields included). There are two screenshots: first, the top half, then the bottom half. Explanation of fields follows.

The screenshot shows a web-based data entry form titled "FullData". The form is organized into several sections:

- Top Section:** ID: 5, Lexeme: abte-nibne-gizes, Lex Cat: na (dropdown), Sound: (text), Sound Source: (text), Topic: Months (dropdown), Source: (text), Definition_Checked: (checkbox), Date_Checked: (text), Elder: (dropdown).
- Middle Section:** Definition_Order: (text), Definition: July (text), Notes: (text area).
- Bottom Section:** UF: (text), Stem: (text), Stem_Definition: (text area), Allomorph: (text), Meaning: (text), Root: (dropdown), Medial: (dropdown), Final: (dropdown).

Screenshot 1: Top Half of Form

Many of the fields are self-explanatory, but others require some discussion. We also note that several of the fields are only under consideration at this point (e.g., see "Topics," below) and may or may not be kept in the final version.

- ID: each lexeme will have a unique ID number, automatically assigned.
- Lexeme: this is where the headword goes. A major issue in Potawatomi for database design and especially for the print version of the dictionary is the form of the headword to use for verbs. (There is no equivalent to an infinitive in Algonquian languages.) First and second person forms all have a prefix on them, which creates obvious problems for alphabetization. Some third person forms are unprefixes, but others have a prefix. There are two approaches which could be taken (and which have been taken in other Algonquian language dictionaries):
 - Use a form called the conjunct indicative for all grammatical categories of verb. This is the practice used by Rhodes (1985) in his Ottawa dictionary, and Nichols in the Potawatomi database that forms the basis of Welcher's earlier work and our current work. Since conjunct forms do not have person prefixes, the alphabetization is straightforward. The disadvantage to this approach is that the conjunct is usually

- used for subordinate clauses, and native speakers and learners find it a counterintuitive choice for citation form.
- Use a form called the independent order. Here, different subcategories of the independent order have to be chosen according to verb type, so that no prefixes appear. (The modes would be third person indicative for AI – intransitive verbs with animate subjects; inanimate indicative for II – intransitive verbs with inanimate subjects; imperative for TI and TA – transitive with inanimate and animate objects, respectively.) An example of this approach is the Nichols & Nyholm (1995) Minnesota Ojibwe dictionary. The disadvantage here, of course, is the lack of consistency when different forms are used for the headwords of different verb categories, which could confuse users.

We have not yet decided on which approach to take; this is one of the primary issues to be determined during the year of our pilot project.

- Sound and sound source: these are for insertion of a sound file of the headword for the on-line version of the dictionary.
- Definition (etc.): this area allows the user to enter as many definitions as necessary for each word, and the order of the definitions can be specified.
- Topic: eventually we may want to code at least a core set of words for semantic field (e.g., months, kinship terms, animal names, etc.), which would be useful to teachers in planning lessons. This pull-down would contain the list of semantic fields to be used.
- Stem and Stem Definition: this will only be used if the word is derived from another word; otherwise root, medial, and final will be filled in (again from pull-down lists). (Root, medial, and final are the conventional names for the three primary derivational slots for morphemes in words in Algonquian languages). Use of this section will require development of a database of derivational morphemes, which we will begin in the first year of funding.

Screenshot 2: Bottom Half of Form

Description of fields, cont.:

- **Keywords:** Because the headword (for verbs) is inflected, the definition field cannot be used for reversing the dictionary (e.g. if the inflected form meant ‘he or she walks’, this would be alphabetized under ‘H’ for ‘he’ rather than the intended ‘W’ for ‘walk’). Instead, the short and long keyword fields are used for this purpose. Short keywords are for major headings (like ‘walk’), while long keywords give more information (e.g., ‘walks with a limp’). (cf. Macaulay 2008.)
- **Inflected forms:** this area is still under construction, but eventually will contain fields for entry of as many inflected forms of the headword as are available (along with coded inflectional category gloss, source, and a sound file). Potawatomi has a great deal of vowel syncope, so it is important to include multiple forms to show the alternations.
- **Examples:** This section allows the user to enter as many examples as needed, and has a field for a sound file for every example, if one is available.
- **Checkboxes:** We will have a system of checkboxes with date fields for the final check on various parts of the entry, e.g. one for ‘checked with speaker’, another for ‘keyword checked’, and so on. This will allow the PIs to monitor work done by others.

B. Dictionary Entries: Two sample dictionary entries (from the Potawatomi-English side of the dictionary) appear below, one for a noun and the other for a verb.

1. **mkezen** *ni* shoe. *pl* **mkeznen** shoes; *l.sg.poss* **nmekzen** my shoe; *dim* **mkeznés** little shoe; *loc* **mkezne** in/on the shoe; *pej* **mkeznesh** darn shoe.

The noun entry is fairly straightforward: this particular noun is an inanimate noun (*ni*). We include the plural, possessive (with first person prefix *n-* here), diminutive, locative, and pejorative forms to show maximal information about the underlying form of the noun stem. In this case the possessive form triggers the appearance of an [e] after the [m] and the deletion of the [e] after the [k]. The addition of suffixes triggers the deletion of the [e] after the [z]. By looking at these forms we can deduce an underlying form /mEkEzEn/ (where the syncopating vowels are represented by capital letters, following Hockett's convention).

2. **wisne(-wak)** *vai* he/she eats. *1.sg nwisen* I eat; *3.pl wisnewek/wisnik* they eat; *part wasnet* the one who is eating; *imp.sg wisnen!* eat!

The verb entry is, given Algonquian morphology, more complicated. For this animate intransitive verb we use the third person singular independent form as the headword, with parentheses indicating an optional augment in this particular form. We include the first person singular to illustrate vowel syncope. The third person plural form is included because the rules for predicting the correct form are complicated, and because variation is possible, as in the above example. Although the participle form ('the one who is eating', with initial vowel change) is predictable, we include it because the process is not obvious to language learners. The native speakers felt that the singular imperative form was useful for language learners, so that is also included.

Obviously, at this early date the form and content of the entries is not set in stone. The database will contain enough information and flexibility that changes can be made at any point.

6. Results from Prior NSF Support

Menominee Dictionary Project. Monica Macaulay, PI (NSF Grants No. 0235873, 2003-2006, \$349,998; and No. 0553958, 2006-present, \$309,450)

This project, undertaken in consultation with the Menominee tribe, has created a large database of Menominee lexical material, with over 11,500 entries as of this writing. The goal of the project is to develop three dictionaries of Menominee: a Beginner's, an Intermediate, and a Comprehensive. All will be available in paper and electronic format, and all are derived from a single database. The Beginner's is finished, and contains about 300 words sorted by semantic field (e.g., animals, time, the pow-wow), each with an example and a picture, for use by teachers and beginning students. The Intermediate (currently in draft form) contains about 6,000 entries, most of which have one associated inflected form and one associated example (we are limited here by what forms and examples we have, but are working on collecting missing items). The Comprehensive will be for advanced learners, linguists, and others interested in details of word structure. It will contain the entire set of words (minus those deemed sacred or taboo), with a derivational analysis of each (we have already done approximately 3,600 of these, so the task is well underway).

Publications resulting from the awards:

- In draft form: Intermediate Dictionary of Menominee.

- In draft form: Diminutives in Bloomfield 1962.
- To appear. Lessons from the Menominee Dictionary Project. *Text Technology*.
- 2009. *A Beginner's Dictionary of Menominee*. (Co-compiled with Marianne Milligan; self-published with Menominee Tribe of Wisconsin.)

Talks given resulting from the awards:

- 2008. Keywords and Definitions: The English Part of the Dictionary. 2008 Mashantucket Pequot Conference on Reclamation of Indigenous Languages.
- 2006. Menominee Dictionary Project. 2006 Mashantucket Pequot Conference on Reclamation of Indigenous Languages.
- 2006. Language and Linguistic Work with the Menominee. Northwestern University.
- 2005. Unpacking Bloomfield: Morphemes and Allomorphs in *The Menominee Language*. (With Marianne Milligan.) 37th Algonquian Conference.
- 2005. A Menominee-English, English-Menominee Dictionary. Instituts für Deutsche Sprache, Mannheim, Germany.

Results of completed work (data, physical collections, etc.)

- Database
- Beginner's Dictionary of Menominee (published)
- Intermediate Dictionary of Menominee (in draft form)
- Approximately 500 cassette tapes / CDs of field recordings and 20 notebooks of transcription, archived at the University of Wisconsin-Madison, the College of the Menominee Nation, Menominee Language and Culture Commission, and Menominee Historic Preservation.

7. Archiving and Dissemination

Project staff, including field researchers, will work in a collaborative, centralized database accessed online and served by (already existing) UW-Madison servers. Audio and video recordings made by field researchers along with associated metadata will also be uploaded onto UW-Madison servers. Working copies of language documentation and data will be maintained by the project staff in the Department of Linguistics at UW-Madison, with regular automated backups on university servers.

The project will maintain two archival repositories for digital copies of documentation and data gathered during the project. One repository will be at the Forest County Potawatomi Cultural Center, Library and Museum (see attached letter of support). A mirror archive of the documentation and data gathered during the project will also be held at UW-Madison, either in an archive at Memorial Library, or in the archives of the Center for the Study of Upper Midwestern Cultures (CSUMC; our sponsor for this grant proposal).

Project staff will maintain a database of metadata records for all documentation (audio and video recordings and transcriptions) that will be used in organizing and archiving materials. Metadata records will minimally use the set of elements as defined by the Open Language Archives Community (OLAC), but may be expanded to include additional elements.

As described above, we are planning on using Microsoft Access as our primary database, since doing so offers several advantages to the project. By using Access (as well as Visual Basic and SQL) we are ensured that there is an available pool of potential computer consultants. Also, by using Access our project will be able to utilize a database that has already been designed (for the related language Menominee), thus allowing team members to concentrate on tailoring the database to the specifics of Potawatomi. We are aware that we are using proprietary software for our database and we have researched the various ways to comply with best practices for open data given this fact. The database will be backed up daily to a University server as an Access database, and in addition, our computer consultant will create an automated export of all data in a delimited text file that will serve as our archival backup.

Copies of our field recordings and notes will be made available to the native speakers, to the FCP Museum Archives, and to other Potawatomi language preservation projects as requested. Much of the gathering of archival library materials has already been completed by Dr. Welcher and Ms. Goss, and much has been digitized for inclusion in the dictionary database (for a partial list see ‘Sources of Data’, above). Copies of digitized materials such as missionary documents, word lists, and assorted other materials gathered for this project will be distributed to all Potawatomi communities. The undergraduate student employed by the project will be assigned to complete the access and digitization of materials not yet collected.

At this early stage it is premature to make a decision about publication of the Potawatomi dictionary that we will produce. However, there are (at least) two promising avenues we can pursue: first, it may be possible to publish the dictionary with the University of Wisconsin Press through the series established by CSUMC. Second, we could follow the lead of the Menominee Beginner’s Dictionary, and self-publish through a site like lulu.com. Lulu provides tools for creation and assembly of volumes, prints on-demand (meaning no storage facilities are necessary), and lets the author(s) set the price and profit per volume. Under either scenario, the tribe will keep the copyright to the dictionary, and all royalties will go to Potawatomi language programs.

8. Intellectual Merit

As discussed above, this project will document the highly endangered Algonquian language Potawatomi, creating an extensive database and an electronic and a hardcopy dictionary. The group that we have assembled includes linguists with expertise in Algonquian languages in general and Potawatomi in particular, linguists with expertise in the construction of dictionaries of Algonquian languages, and members of the Potawatomi Nation (one of whom is herself a trained linguist).

We have listed above the many attempts at lexical documentation which have been made over the years (and centuries); this project will for the first time bring all of those resources together, supplementing them with additional fieldwork with the last first-language speakers. The dictionary which will be produced will be of interest and use to professional linguists, providing a valuable lexical database which can be used for comparative research. The web-based version

of the dictionary is envisioned as containing much richer data than the hard-copy version, and it is the web-based version that will probably be the most useful to linguists. It will contain, for example, derivational analyses of words, underlying forms, etc.

Potawatomi (like all of the languages of the Algonquian family) is polysynthetic, with very complex verbal morphology, grammatical animacy, inverse person-number marking, and obligatory as well as stylistic obviation. Data from Potawatomi have figured prominently in numerous works on theoretical morphology (e.g., Anderson 1992, Halle & Marantz 1993), and the presentation of inflectional forms (especially of verbs) will contribute to that scholarly dialogue.

Interestingly, the remaining speakers of Potawatomi show much less attrition than one might expect given the degree of endangerment of the language. They have a great breadth of lexical knowledge without significant gaps, and retain lexical specializations in herbal and ceremonial usage. This makes the documentation all the more valuable to linguists, including those interested in the study of language death, and makes it all the more urgent.

9. Broader Impacts

This project is a collaborative effort between researchers and the Forest County Potawatomi community. It is the first project to be undertaken under the auspices of the Indigenous Languages Preservation and Promotion branch of CSUMC, and creates a partnership between the University of Wisconsin and the Potawatomi Nation. It serves as a model of endangered language documentation that is of benefit to and has the full participation of both the language community and the scientific community. In addition to the Potawatomi elder fluent speakers who will be working on the project, two younger Potawatomi people will be receiving training and gaining experience in language documentation under the mentorship of more experienced linguists. The idea for the project originated with Potawatomi community members, and they approached the co-PIs for assistance. Because of the level of community involvement in the entire process we have a clear focus on products that will be of immediate benefit to community-driven language revitalization. The elder fluent speakers are active in choosing dictionary entry formats that are clear and intuitive to them, and the participation of younger community language activists ensures that the dictionary and any other materials developed will be tailored to the needs of language learners.

This is the first dictionary project to be undertaken using the template developed for the Menominee Dictionary project (with NSF and NSF-DEL funding), and it is hoped that this will serve as an illustration of how the template can be transferred and adapted to other dictionary databases. The goal is for this template to serve as a general model for dictionaries of Algonquian and other languages. The involvement of an Algonquian specialist from a university near Forest County (Macaulay) plus a Potawatomi specialist with rich experience in best practices in language documentation (Welcher) ensures that this project can serve as a model for other documentation and lexicography projects, especially those involving Algonquian languages. The graduate student from the University of Wisconsin who will work on the project (Goss) has extensive previous experience with the Menominee project; her work adapting the

template to Potawatomi will make her an expert in this process and a valuable resource person for those working with other languages. The undergraduate assistant will also gain experience in a wide variety of aspects of the research process, and if we are able to find a Potawatomi student to fill the position, will get to learn about the field of linguistics, plus the basics of their heritage language.

Finally, the project team is working on a set of project protocols dealing with intellectual property issues. In its draft form, the protocols state that only project team members will have access to the language data until the dictionary is published, with the exception of approved scholarly papers and educational presentations. The fluent elders will have final editorial say over the dictionary. Copyright on the published dictionary will belong to the Forest County Potawatomi Tribe. These protocols are, of course, subject to revision with participation from all project team members.

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