

Struggling Languages in a Wired World: How Best to Use the Internet in Language Revitalization

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December 11, 2007

1 Introduction

Languages are dying at an alarming rate around the world. There are many things we don't know about what we lose when a language dies, or what to do to stop language death, though this question is starting to be addressed (Harrison 2007). Language death is also happening much closer to home than we may realize: there are many indigenous languages in the USA and Canada that are at risk of extinction.

*My thanks to Jason Kandybowicz and K. David Harrison, both of Swarthmore College, Katie Bates and David Stifler, Margaret Noori of University of Michigan Ann Arbor, and Peter Brand. They have all given generously of their time, and helped immensely. Any errors that remain are mine alone.

There are various ways to approach a language on the brink of extinction, of which *preservation* and *revitalization* are two that I will consider. As I will use the terms, *preservation* largely entails recording as much information as possible about the language, before the last speakers die. It is an option of last resort, when the barriers to revitalization are too high. *Revitalization*, then, is an attempt to raise a new generation of native speakers, children who have acquired the language from their parents' generation, and use it among their peers and the community as a whole.

Revitalization is of particular use among those termed "heritage speakers" — those who grew up hearing the language in question, even passively. There is evidence, for example, that they can more easily acquire native speaker-like competency with the language's phonological system, even later in life — beyond the critical period (Au et al. 2002). Furthermore, they have a particular reason to speak it, in that there exists around them at least some degree of a community and culture still connected to the language in question. This makes efforts to revitalize language use among heritage speakers potentially more promising and more meaningful than a hypothetical undirected language revitalization effort.

There are many fronts on which the battle to revitalize a language must be fought, and many tools with which to fight them. One tool which is starting to be used is the Internet. This is particularly so in the USA and Canada, where Internet access is much more readily available than in many other parts of the world. Projects using a combination of web sites, Internet telephony, email and email-like services, instant messaging, and audio and video media are starting to

come into existence, in an effort help revitalization efforts.

In this paper, I will examine two such projects, First Voices and Ojibwe.net, and the ways in which they have been successful. In so doing, I will attempt to show what areas of a language revitalization effort would, in general, be well served by the use of a website-based project, and what sorts of things the Internet is not well suited for in this regard.

2 Why Do We Care about Minority Languages?

We in the linguistics community have been hearing more and more about the state of endangerment of the world's languages. The more grave estimates have fifty percent of the world's seven thousand languages at risk of extinction by the end of the century (Harrison 2007:3). Yet many people —mostly outside of the linguistic community —seem not to care, or occasionally even view the loss of a language as a non-problem. Such people have raised points like these: language death — when it is through migration of a language community to a majority language, and not, say, genocide — leads to more economic opportunities and a better quality of life for those who make the shift; language death, or rather, the reduction in the total number of languages in the world, increases the number of people you could potentially talk to; language death is not *death*, but the conscious decision of speakers to use a language they, for whatever reasons, prefer. These arguments deserve some treatment. As my main purpose here is not a defense of the idea of minority language rights, it will be brief.

First, it is not at all clear that language shift increases quality of life. The number of economic opportunities for many minority language groups is not limited solely by their language, but by many other limiting factors present in any minoritized community. It is rare, if not unheard of, for a majority group to completely accept people from a minority group who speak the majority language as first language — the group will still be viewed as a minority, and as such, usually face some disadvantage. Furthermore, economic opportunity should not be the sole measure of quality of life — cultural identity and a sense of belonging are also important, and alienation from them, as happens when a culture is lost¹, is often potentially detrimental to quality of life (White, 2006:91). That said, it is clearly

¹Language and culture are inseparable. Chomskyan linguistics does its best to look at language in the abstract, disconnected from the incidental details of culture. This can be very informative, and bring the study of language closer to a manageable scale. However, when considering language in the context of conservation, it is worth remembering that culture and language cannot be saved independently. Preserving culture without language is close to impossible, and preserving language without culture is, at the least, unfortunate.

This is a point often more readily seen by members of the community than by linguists. For example,

“The language ideologies of the Tagish FirstVoices team can be conceptualized in terms of three main themes: the holistic nature of language and culture, a preference for traditional modes of social interaction, and the centrality of the elders knowledge.” (Moore & Hennessy 2006:129).

This is but one of countless examples. The failure of linguists to consider that communities are interested in accepting linguistic inquiry into their language often in large part so that they can be in a better position to maintain their culture can be a source of tension, and detrimental to both party’s agendas. For example,

“Linguists who have studied Haida have focused primarily on description and analysis for scientific purposes; they have not focused on creating readily accessible, understandable teaching materials for language restoration something many Haida who want to learn the language have identified as a great need. Partly because of this seeming disconnect between what some linguists want to do with the language and what Haida people might prefer to see done, relationships between the Haida people and linguists have sometimes been uneasy.” (Breinig 2006:113)

not the job of linguists to tell people what language to speak, especially not if that language is one that limits a person's ability to provide for themselves in a feasible and comfortable fashion. Rather, at least in this author's opinion, it is the role of linguists (if you accept that it is the role of linguists to defend minority languages at all) to facilitate the speaking of minority languages and maintenance of one's culture, while not limiting the opportunities for economic well-being.

Second, the idea that a reduction of the world's languages increases those one could potentially talk to is an idea from a profoundly monolingual society — the idea that people will speak only their native language is a strange one in much of the world. And yet, this realization of a high rate of multilingualism in the world must not be taken to mean that adoption of a majority language poses no threat to the continued vitality of a minority language. For the minority language not to suffer a loss of speakers in the face of daily use of the majority language, there must be that *rara avis*, a stable bilingualism. Since the balance for such a thing appears to be so delicate, it must be admitted that, while an appealing idea, it is not something that can be assumed to be feasible generally. A prerequisite for a stable second-language bilingualism is that the minority community's language be the primary language of daily life, such as among the Tewa, in New Mexico (White 2006:99), who steadfastly maintain a separation between their language, the sole language to be used within the community, and Spanish or English, used with those outside.

Lastly, it is not at all clear that language shift is the product of informed decision making of competent adults. The primary language learners are children.

Children do not *learn* their native language from their parents so much as they *acquire* it from their community. In a multilingual community, children will perceive many cues indicating the relative statuses of the languages present, and will often end up using the more socially prestigious language, to the exclusion of others. They are, in the words of David Harrison, “tiny barometers of social change.” Unfortunately for them, though, it does not necessarily benefit them, as detailed above— it inclines towards a loss of culture, without necessarily yielding better economic opportunities.

Having addressed some of the arguments in favor of allowing language death, it is still not entirely obvious that it is *bad*. What do we stand to lose, if these languages die? The answer is partly that we do not know, and that alone should give us pause. There are some things that are clear, however. First, there is the issue of traditional knowledge about the local environment, ranging from tribes in the Amazon being able to inform people of the medicinal properties of local plants—which can then sometimes be used to good effect, say, by drug companies — to Aboriginal Australian knowledge of how to keep a culture thriving in the middle of Australia. There is also the issue of human rights: for those of the older generation, who are left with no one younger with whom they can speak in their native language, language death is a deplorable state. For anyone who has lived in a context where they are speaking a language other than their native one, the frustration present in any attempt to communicate or understand anything nuanced will be familiar. It is an unfortunate state, and one to be avoided if possible.

3 What are We Doing to Save Minority Languages?

It is clear that we cannot, morally or practically, simply tell or force people to continue to speak their ancestral language. What can we do, then? Of course, there are things outside of the scope of linguistics *per se* that we can do, in the realm of social activism and economic improvement. But as linguists, we are concerned with helping the continued and reliable transmission of the language from one generation to the next.

There are many ways to apply money and time to this issue. There are the apprentice-master language teaching models used in places such as California. There are the language crèche models used in places such as Hawai'i and New Zealand. There are language camps and resources for parents who wish to raise their children in a household speaking the language. However, what I will focus on will be the use of the internet in language revitalization projects. As a medium for communication, the Internet seems like a potentially very powerful tool to preserve and revitalize systems of communication.

It is often the case in endangered language revitalization efforts that one generation has already grown up not speaking the heritage language, at most passively understanding it. Thus, the intergenerational transmission of the language has already been disrupted. The issue usually then becomes one of communicating the grandparents' generation's knowledge of the language to the children. Unfortunately, these are the two groups, at least typically, least suited to Internet-use: the young children and the grandparents' generation. Furthermore, even in a wired society such as that of the USA or Canada, minority indigenous groups are of-

ten less present on the Internet, for exactly the reasons of economic disadvantage mentioned above. The second issue can be resolved with a fairly direct application of money —grants used for computers and internet connections in places such as community centers are not uncommon. The first issue, usability and degree of use of the site, requires good accessible design coupled with action among the community, to address.

4 Focus of the Thesis

In this thesis, I will investigate the advantages and disadvantages of the Internet as a tool in minority language revitalization, with particular reference to cases in the USA and Canada, where indigenous communities are particularly likely to have and make use of Internet access (as compared to areas of the world where Internet access even among the majority culture is limited).

I will first talk about the particular strengths of the Internet, then about the history and state of these projects, and finally look at the degree of success of two of these language revitalization efforts. Based on interviews with Peter Brand, the co-founder of First Voices (a project based out of British Columbia), and Margaret Noori and Howard Kimewon, two of the lead figures of Ojibwe.net (a project based at University of Michigan Ann Arbor, serving a community on both sides of the border between the USA and Canada), I will attempt to show that the Internet can be useful in a revitalization effort, given some prerequisites, but that there are some pitfalls to avoid in implementing such a project.

5 The Internet

This may seem obvious, but it is worth stating: the Internet is many things, but for our purposes, its most salient feature is that it is a massively large communications network with a very low cost to use. Among the things that it is *not* is a normal social community, in which one could, for example, acquire a first language. So clearly, the Internet cannot be a panacea for endangered language revitalization attempts — infants, the primary learners of language, and the most important learners for a language's continued viability, will not acquire their first language from the Internet.

What is it good for, then? One thing it can be used for is communication between those who are already speakers of a language— those who speak the endangered language in question, and those who wish to speak it. This communication can cover a wide range of topics pertinent to a language revitalization effort: information about the language, information about where others who speak it are located, information about how many other people are putting effort into learning the language. Helping people to see that they are part of a larger community is an important role for the Internet. It is very important to maintaining positive attitudes towards the language that people realize that there are other people out there concerned about the risk of the loss of culture and language, and doing things about it. In roughly ascending order of utility in a revitalization effort, a website can be used to record information about the language, provide lessons and course-guide style information for second language learners, provide pedagogical information for parents who wish to raise their children in the language,

and provide communication and coordination for both text-based and audio communication between remaining speakers and learners—including options such as remote classrooms.

However, the primary advantage of the Internet over other modes of communication and organization is its ability to connect geographically disparate groups in something close to real time, but allowing for asynchronous communication. This is familiar to anyone who has used email or Internet fora or blogs or any of a number of other similar systems: you can send a message, and at any time convenient to the other party, it can be acted on: received, dealt with, responded to. There is no transportation time, but there is also no requirement that the recipient be present as you send it.

Because geographic dispersal is not always a typical feature of communities with endangered languages, the real strengths of the Internet will not always be applicable to all revitalization efforts. In the cases of First Voices and Ojibwe.net, geographical dispersal is a very salient feature of the communities involved, and so the projects, as I discuss later, are well-suited to the issues of their particular context. However, in cases where geographical dispersal is not a major factor, the main issues that an Internet-based project can try to address are these: to make children realize that it is more valuable to them to maintain a connection to their cultural heritage and language than not, and to help transmit the traditional knowledge present in that language to the younger generation. This would appear to be almost orthogonal to the strengths of the Internet. Yet there are some ways in which the Internet can help the perceived status of the language, in the

community as a whole and among the youngest generation.

One of the single most powerful technologies of the world's most populous languages is a writing system. Having a written form does a great deal for a community's positive attitudes² towards their language. Or, perhaps it might be more rightly said that, in the context of languages with a written form, lacking one helps to convince people that their language is not as sophisticated, powerful, or even that it "lacks grammar"—a recurring idea in negative attitudes, both within and without the community (England 2007:99). The use of the minority language, even in informal media such as text messaging and email can lend it some more weight against the perceived superiority of the majority language. Further, use of the language not just in some potentially hard-to-find print sources, but in the easily-searchable Internet can both raise the profile of the language (again, both inside and outside of the community), and lend it an air of vitality—that it is a language applicable and active in the modern world. The importance of community perceptions in revitalization cannot easily be overstated.

The next issue is whether and how the Internet can be used to connect children with elders who still know the language. This is an issue more in communities where the language is close to moribund, and there are no children acquiring it as a first language. This is perhaps best handled by a combined approach: good, accessible design practices for the website component of a web-based tool, such that

²There are multiple ways in which positive community attitudes towards a language can help it: first, the community will spend more time and money towards the revitalization of the language, which can take many forms: literature, classes, insistence on daily use of it, and so on. Second, such actions will be picked up on by children, who will be more willing to learn and use the language.

even people with minimal experience in website use can navigate it and use it, combined with community activism to get people to want to use this tool. Hopefully, the latter component will be minimal, and require little more than showing people it exists, and what it can do. The purpose is not, of course, the tool, but the end.

The first issue applies more to how to design the interface of the website component. Terry Winograd, a human-computer interaction specialist, has identified three main metaphors with which we design user interfaces (UIs): Manipulation, Locomotion, and Conversation (Moggridge 2007:462). The earliest UIs focused on the Manipulation metaphor (probably one of the most readily available to inexperienced computer users), as it is perhaps the most direct way to view using a tool, such as a computer. The Manipulation metaphor describes things such as the use of windows which function somewhat like sheets of paper, clicking and dragging icons, and other metaphors for physical objects on a table in front of you. The Locomotion metaphor, on the other hand, has pervaded website-design and Internet use. This is evident in how we talk about it: “Go to Google,” or “I went on AIM [AOL Instant Messenger] last night,” as opposed to “Drag the file to the Trash,” an example of the Manipulation metaphor. While it may seem that the Conversation metaphor would be very relevant to any computer-based tool involving language, it is not: it has more to do with conversation with the computer, as in help wizards, which ask the user a series of questions with limited answers to get the information that they must manipulate behind the scenes. The conversation that we are actually concerned with is conversation between humans, which is

merely facilitated by computers.

A good tool will indicate its mode of use. Take an early telephone: there is a device that fits your ear, a device that is then at the height of your mouth, and the act of lifting the earpiece connects to the operator. Human communication can be used to reach the person you wish to call. Similarly, a website designed to be used by those inexperienced with computer-use should present itself as a familiar tool or collection of tools with components manipulable to achieve familiar ends. This will vary depending on the cultural context, of course, and some innovative uses will certainly require whole new metaphors to be introduced. But design should strive as much as possible to present the basic interface in familiar terms and to allow for different responses based on different cultural norms (Yeo 1998).

6 Some Issues for a Revitalization Effort to Consider

There are a number of issues present in any revitalization effort, and some which are unique to one that attempts to use computers as a major part of the effort. The first and foremost is, of course, that there must be desire within the community for revitalization. There must also be enough speakers that the language has not passed a tipping point past which revitalization would arguably be not of the language itself, but only something very much like it. An example of this is modern Hebrew, which is arguably not a descendant of the ancient Hebrew it claims to continue. On the purely technical side, there are issues of representation: for a written language, how to encode it on a computer, and for an as-yet-unwritten

language, also the issue of how to write it, and how to spread the understanding of that writing system among speakers.

A prerequisite for any endangered language revitalization effort is community support. Without the will of the community, there is no way to keep a language flourishing. It is therefore worth observing that many indigenous communities strongly care about their language, and see it as a primary vehicle through which to maintain their identity and culture. For example, the Haida, in Alaska and British Columbia, have begun extensive language revitalization efforts. Through 19th and 20th centuries efforts to convert them to christianity, English-only boarding schools, and a decimation of the population through smallpox, they have been left with a small speaker base (Breinig 2006). But they have a strong sense that to speak Haida is necessary if they are to maintain their cultural history (Breinig 2006). To take another example, the Mayan communities in Guatemala have made an explicit connection between preservation of their many languages and preservation of their culture and, in fact, simply their identity as a major ethnic group in Guatemala. "A common rallying point for the Maya Movement when it began was language. Most leaders were agreed that Mayan languages were a core value of their communities, were unequivocally Mayan, and needed to be promoted on a par with the national language, Spanish (England 2006:96)." Many Maya are now studying linguistics, and returning to their communities to write linguistic descriptions of their native languages. In so doing, they are raising the profile of these languages, both among their speakers, and among the population of the country as a whole.

Something else that is, if not a prerequisite, then at least something important to remember and consider is that the primary learners of a language are infants. For a language to be vital, it must be passed on from generation to generation. There exist languages with small speaker populations that have continued to exist for many generations, though such examples may be rare (Harrison 2007). Thus, when a language is not being passed on to a new generation it is termed moribund. It may have a large number of speakers, but if they are all elderly, the outlook for the language must be bleak. It is therefore important to remember in any revitalization effort that a major concern must be whether and how children are acquiring the language. Some have gone so far as to suggest a two-stage approach, or a two-vector approach, where there is a project designed to help adults learn and use the language, and another project just for helping to raise children speaking the language (Wetzel, 2006).

Another major issue in using endangered languages online is that of how to write them. The simple fact of having a writing system can often go a long way towards fostering positive attitudes towards a language — towards legitimizing it in the eyes of its speakers. However, of those that even have writing systems, they are often created by outside agencies, and not necessarily well adopted or understood by the actual speakers. Such writing systems also tend to come from a choice of a standard dialect, often a choice made by an outsider. This will sometimes not correspond sufficiently to many of the other dialects spoken to be of much use to them — as if we wrote in Scots by convention. Further, many such scripts do not use only the basic Latin alphabet, but rather include some extra

characters and diacritical marks. This raises a potentially thorny issue: how best to represent the characters available in the writing system online, and how best to let end users type them on commodity keyboards.

The issue of non-Latin characters is a difficult one. A computer represents all characters available to it as numbers, which then get mapped to a specific visual representation through a font. Since computers were primarily developed in areas using the Latin alphabet, the character sets in use were initially only defined for the Latin alphabet. However, in many cases, a minority language will need different characters, and switching between character encodings is infeasible, while switching between fonts is ill-principled. A promising solution has been the increasing adoption of the Unicode standard for character encoding. This standard defines an area large enough to encode all the scripts currently in use in the world, and much more besides. However, to be granted space in the standard by the Unicode Consortium comes with its own set of problems. Most clearly, political issues arise in deciding what is and is not a distinct character. For example, Latin capital letter A is distinct from Greek capital letter Alpha, even though the two are visually indistinguishable. This makes sense, as they are clearly different letters from different alphabets. However, the issue can get cloudier: take, for example, the character ł used in Navajo. It is also used in Polish (very differently), but gets one codepoint, to be used by the two alphabets. Thus, some alphabets get a more or less contiguous block of the Unicode space. This may seem a trivial issue, and it generally is. But sometimes a community will insist that their n-hook is not the same as the n-hook used by another group (i.e., one goes one way, one goes the

other). It can be a matter of some tension whether or not they are forced to use what is seen as an alien character in writing their script on a computer. Imagine, if it helps, having to use an Alpha whenever you wanted to write 'A', because, say, the encoding standard had been developed in Greece. Generally it might not bother you, but you would know it was not an 'A', and it would make your use of your language in a computer environment seem second-class.

This is all before getting to issues of entirely different scripts, and whether the Unicode Consortium will agree to adopt them; at least, for most endangered languages in the USA and Canada, the bulk of their script (be it a Latin-based script or one of the Canadian Aboriginal Syllabics) has been adopted by the Unicode standard. However, in some areas, groups are not so lucky; for example, the Ho in India have had some great trouble in getting their syllabary recognized and adopted by Unicode (Harrison, personal communication).

7 First Voices

First Voices is a project funded mostly by the Provincial government of British Columbia, and run by members of British Columbia's First Nations groups and Bands³. The project began in 2000/2001, and was essentially the first of its kind: a database of data on Canadian indigenous languages gathered from community self-documentation. The goal of the project is to provide a framework for communities to, with a small threshold of technical expertise, self-document and then be

³These are Canadian terms for certain indigenous groups. Exactly which groups are referred to by the term is not relevant here.

able to use that documentation as both a way to raise the profile of their language, inside and outside of the community, and to help people who want to learn or teach the language to do so.

The core set of communities represented are those of the 203 First Nations in British Columbia, speaking between them approximately 32 languages. There are also groups elsewhere in Canada, with the most distant being the Mi'kmaw in Nova Scotia, and even some groups in southern California. For a community to have their language represented in the database, there is a multi-step process. First, funding must be procured, either from the community, or more commonly, from a government grant. This funding is to pay for the initial training session: for about a week, one or two people from First Voices will come to the community, and train a group of volunteers in the use of the site, and the use of the digital recording equipment that First Voices provides to the community. There must also be a series of community meetings to discuss whether or not the community wishes to embark on this project, followed by discussion of issues such as orthography. How best to convene and run these meetings is entirely a community choice, but First Voices recognizes the importance of community ownership of the project, and requires that there be something of a community decision on whether to embark on it.

The point of community ownership is an important one. In the words of Peter Brand, one of the founders of First Voices, all of the content on the site has been made "by a First Nations person from within a First Nations community." The aspect of self-documentation and self-determination of how to use the material

goes some way to ensuring a positive community attitude towards the project: it is, after all, theirs. First Voices, as such, is more like a combination of a web hosting service and consulting service, with some further unique elements.

From the content-creation side, First Voices is a relatively complex site, and seeks relatively high-quality data from the participant communities. The recordings and systematic grammatical elicitations that make up much of the content on the site require some knowledge of how to use recording equipment, and how to go about getting recordings from speakers. As such, without the training session, it might be little-used, or filled with poor-quality content. The training session overcomes this barrier to content-creation use, but creates another barrier: cost. Fortunately, the British Columbian government is continuing to provide funding and new First Nations groups are able to join the site.

This training session is somewhat like the idea of Capacity Building, practiced in other areas of the world, wherein members of a minority language community are given training in theoretical linguistics, in the hopes that they will become well-informed language activists in their community. Usually, the people who have enough interest in theoretical linguistics to do this will also care about language, and so this does sometimes work. In this case, however, the training is directly in language data gathering methods, which are, of course, directly applicable to the task at hand: self-documentation.

Community attitudes towards heritage languages tend to be positive already, in British Columbia. As such, the role of the Internet in creating support for the idea of maintaining and revitalizing the language is limited. However, it is the

case that a project like First Voices gives people an idea of concrete things that they can do to help revitalize the language, or at least preserve it. Participation with the community Language Coordinators is a clear way to feel that your efforts are directed in concert with those of others, and to do some actively useful work towards preserving the language, at the least.

Simply having modern-feeling resources in the language, such as teacher resources that can be made from the First Voices data, can also have a big impact on the attitudes of the younger generation. Speaking of his experience as a teacher in a tribal school in British Columbia, prior to First Voices, Brand said, "It was very clear to us that engaging the kids in their heritage language through the use of computer technology was just a win-win situation." They became more excited by it, and were more eager to learn and use it.

The elders, too, seem to be generally in favor of First Voices. Brand says that there is an emerging feeling among the older generation that this is a way for them to be engaged in language revitalization (through being language informants for the community language coordinators), and that it is a way of presenting the language that appeals to all sections of the community.

First Voices is perhaps the oldest project of its kind, but it is still young. The project is just getting to the point where there is enough data on certain languages that actual language courses can begin to be created. There are plans to add more multimedia content, and begin a related project focusing on these language courses. It seems to have addressed the barriers to entry on both the content-adding and content-using sides, and is now moving on to implement more so-

phisticated uses and presentations of the available content.

The success of First Voices appears to come largely from the strong element of community involvement — training, even. It provides a suite of interlinked services. Some of these are ancillary to but necessary for the main goal of creating a thorough self-documented database of information on the language, which can eventually be used to teach the language, but can immediately be used to promote the language. Some of them are the framework for that goal. By focusing the training services on linguistic data collection, they address the actual issue of getting the community to codify the data. They keep what should be behind the scenes, behind the scenes — the infrastructure that allows the site to run, and accept data from community language coordinators easily.

Perhaps the greatest weakness in the project has been the large amount of time it has taken it to start to create language lessons. Because effort has been focussed on gathering data from many languages, there has so far been little effort spent on creating curricula. There are three knowledge-intensive disciplines involved here: website creation and maintenance, field linguistics, and language education. The project has divided them nicely, training community members in the field linguistic techniques necessary for self-documentation, and leaving the website design to a smaller group of specialists. However, the educational quality of the language data so far collected has been largely dependent on circumstantial details. However, having a group of language-education specialists would be a fraught decision; that would clearly be taking away from the community autonomy that is so important to the project. There are, however, also problems with

including language education training with the field linguistics training. Such a course would have to try very hard to avoid imposing views of how language should be taught, and instead incorporate community views on the matter with academic ideas on the subject. Thus, the slow approach to adding language educational material — beyond the basic phrases and how-to-pronounce information that the site has started with — is probably the least risky.

8 Noongo e-Anishinaabemjig / Ojibwe.net

A very different project is Ojibwe.net. Launched in June 2007 by Professor Margaret Noori and others at the University of Michigan, Ann Arbor, the site is aimed at connecting members of the over 200 different Anishinaabe, or Ojibwe, communities around the Great Lakes area of the USA and Canada. In these communities, the number of speakers of Anishinaabe languages ranges from thousands to zero native speakers.

The site grew out of the Anishinaabemowin language classes Professor Noori teaches at the University of Michigan, and began as a way of making public the course materials, rather than placing them on a closed site, such as the UM-internal course document site. As such, it has a more centralized and pedagogical feeling than First Voices. However, it must not be thought to be more disconnected from the community. It is made by members of the Anishinaabe language community, and receives constant feedback from people involved in that community, both those taking Professor Noori's language courses, and those using the

site independently.

A role that has emerged for the site is that of an online meeting and coordinating space: there is an extensive section of links to communities' sites, and links to information about gatherings of speakers of Anishinaabe languages. This has become a major point for the site — facilitation of in-person meetings among a community widely dispersed, on both sides of the US/Canadian border. This is perhaps a natural outgrowth of the original view of the site as a support for in-person meetings for language teaching.

While in principle the content on the site is controlled and administered by a small centralized group of people, in practice they are very open to adding content provided by users; this shifts the burden of technical expertise to a small group of people, the site's maintainers, who can then facilitate the distribution of language materials provided by users.

Noori has found that they get very quick and useful user feedback from some of the site's thousand or so active users, indicating whether the changes they make are deemed helpful or hindering, from the point of view of the users. In their experience, attempts to make the site fancier, more "Web 2.0", such as using technologies like Flash or AJAX, have been the least successful directions they have explored. By holding to text and audio, they ensure that the site is broadly accessible, particularly by people with slow Internet connections who make up an important part of their userbase. The goal is not to make a flashy website, but rather to use the web as another medium where the language can continue to be used actively. In Professor Noori's words, "We know that to keep a language alive

it must continue to be used creatively, and that is our primary goal.”

Ojibwe.net is much younger than First Voices, and has had less time to accrue data and experiences. However, it already has much by way of lesson material for Anishinaabe. Of course, as an outgrowth of an Anishinaabe language course, and as a project devoted entirely to the support of one language, this makes sense. Ojibwe.net is an example of the success that a community-internal project can achieve: as it has been created by someone who is both a speaker and a teacher of the language, lessons are immediately available, and concerns of community reaction to teaching methods are minimized. Professor Noori has then worked with a collection of people, including native speakers of Anishinaabe and web designers, to make a site that is easy to navigate, quick to load, and contains clear and informative — and interesting — content on the language, among other things.

Ojibwe.net and First Voices are trying to do different things, of course. While First Voices is trying to cast a wide net, and help many languages be, at least, preserved, Ojibwe.net exists to strengthen connections within a dispersed community, help those who wish to learn do so, and proclaim that this language is alive and vital. Within the contexts of their distinct goals, each seems so far to be successful. In both cases, a considered and incremental approach to the addition of content and types of content has proven to work well. Also, in both cases, intense community involvement has been a prerequisite for their success.

9 Conclusions

The Internet is a tool of communication. Language is the essence of communication. As such, the Internet would seem ideally suited to projects involving the spread and invigoration of language. As we have seen, though, this is not the case in an unqualified fashion. When a language is dying, it is often the case that the community in which the shift is taking place is not already one with great Internet penetration. But when a community already has a familiarity with computers, and uses the Internet, then a website and supporting uses of the Internet can be very effective.

Such a site needs, as does any language revitalization effort, a great amount of community support and participation. But it also needs to be usable. The requirements for usability are always to a degree context dependent, but it appears that low-bandwidth sites are generally advisable: for a community off the power-grid, with satellite Internet, or even one that is wired, but not among the affluent targets of high-bandwidth Internet Service Providers, a site that they can effectively use is paramount.

In terms of content types to use in such a site, a balance must be struck between richness of content and bandwidth-intensity of the content. Clearly, real-time audio-visual communication with other speakers would be ideal —making the Internet as close to real-life interaction as possible. However, this would be an infeasibly large use of bandwidth. So we must prioritize. The most important content to include appears to be audio recordings of native speakers. Text, of course, should be included; in many cases, though, this requires character sets not broadly

implemented or accepted. However, within the USA and Canada, most indigenous groups use the Latin alphabet, and thus text is easy to include. The next most important role for such a site is facilitating in-person meetings, where the dream of real-time audio-visual communication becomes the simplest of things. To mention some actual content types that both First Voices and Ojibwe.net use to good effect, audio is, of course, indispensable. However, language-oriented Flash games, for example, seem to get less return for the investment to create them. In the case of First Voices, where there is a template for a coloring-book style game, the investment is worth it, as it gets to be used with no additional cost by many language groups. But it would probably not be worth Ojibwe.net's time to make such a game. Finally, coordination of speakers and learners among the community, by providing information on gatherings, can keep people coming back to the site, and using it as a continuing resource.

Projects embarking on using the Internet to help revitalize a language must remember that their primary goal is to be accessible to that language's current and heritage speakers, and that being "Web 2.0", and using cutting-edge technologies will not necessarily help. At the very least, such design choices must be very carefully considered.

With these provisos in mind, we should be eager to use the options the Internet provides. It appears that the Internet offers an interesting new route through which to help in the struggle to maintain our cultural diversity.

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