

The Bhutia Dictionary: Preventing Himalayan Language Extinction

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Date Range: Mid-June to July 2019

Country of Project: Sikkim, India

Background Information:

Sikkim is a multiethnic and multilingual state located in the eastern Himalayan region of India, bordering Tibetan cultural areas in China, Bhutan, Nepal and West Bengal in India. Due to their central location, the roughly 540,000 residents speak a variety of languages: English, Nepali, Bhutia, Lepcha, Limbu, Gurung, Manger, Mukhia, Newari, Rai, Sherpa and Tamang. Many of these local languages predate the dominant languages of English and Nepali by hundreds of years and have deep roots to the history of Sikkim.

However, despite the rich histories of these languages, they are rapidly falling out of use. One of these languages, Bhutia is especially at high risk and on the verge of extinction with only 7% (as of 2006) of Sikkimese students of grade 8-12 identifying as speakers of Bhutia. The state government educational institutional preference for English and Nepali and historical forms of imperialism in the region have marginalized local indigenous languages like Bhutia. Additionally, there are no publicly accessible Bhutia language resources for people who do not grow up speaking Bhutia, aside from those developed for students in government schools.

Action needs to be taken to prevent the practical extinction of Bhutia. There is a strong ethical reason to promote Bhutia as the extinction of Bhutia's usage in the real world means the loss of an entire culture. The disappearance of Bhutia language use foreshadows issues currently faced by other language communities in Sikkim. As language is intimately connected to culture and ontologies, language loss will lead to the loss of diversity and identity. Additionally, historical experience demonstrates that the lack of opportunities for different ethnic communities to study each others' languages can lead to conflict and discrimination due to cultural misunderstandings. For this reason, developing tools that promote language sharing in a multiethnic, multilinguistic community such as Sikkim is of utmost importance for supporting harmonious interaction and exchange.

Project Summary

We aim to promote intercultural understanding by promoting local language use. Sikkim will act as a pilot project for developing language learning resources initially for the Bhutia language and, over time, for other marginalized languages. If we are successful, emerging local language speakers will not only develop an appreciation for the language, but also develop an attachment to its history, culture and art; we hope that this attachment will encompass any spiritual, intellectual and emotional dimensions of systems of local knowledge, foster inclusive and sustainable social development and fundamentally, contribute towards long lasting peace in this multicultural region and others.

This project aims to create accessible digital resources for those who wish to learn the Bhutia language. I aim to design and implement a robust framework of digital dictionaries—in the format of a website and downloadable mobile app—for Bhutia. For the website and app, users will be able to search words and find key information about the words. Administrators will be able to edit, add or remove dictionary information for the website and app through a special administrative content management system. Before I head to Sikkim in the summer of 2019, I intend to build on existing work to finish development of the website, content managements system and the downloadable offline mobile app.

I propose to spend a month in Sikkim, where I will work with dictionary content contributors. I will work with Dr. Holmes-Tagchungdarpa and other local language scholars from the language education organization Khyerab Yargey Tsogpo in the state capital of Gangtok and in the west district of Sikkim to expand on dictionary entries. We will create a complete and comprehensive dictionary with appropriate information, including definitions, audio pronunciations and usage. During this time I also hope to negotiate with copyright holders of existing physical dictionaries to include entries from these dictionaries in my dictionary which will be free and open source.

When I am not coordinating content creation, I will spend my remaining time interviewing the target audience to understand their interests so that the overall design of the language learning website and app can be refined. I will interview a diverse range of Sikkimese people, especially speakers, teachers

and scholars of Bhutia language. While I interview these potential users, I will also test my website and mobile app prototype on them; I will also test the content management system for dictionary content contributors. I will ask key questions like how the user interacts with the website to find what they need and whether the website is visually appealing and accessible. Ultimately, these changes may range anywhere from minor visual changes to developing entirely new features.

In the latter half of my time in Sikkim, I will be coding and promoting the website and app. I will use previous user feedback and demographic research to make any major adjustments to the website, app and content management system. Once I have implemented these suggestions, I will spend the rest of my time trying to promote my dictionary to a larger and wider variety of audiences, including language scholars and teachers from other language communities, including Lepcha, Tsong, Rai, and Gurung. During my time promoting the app, I will also try to solicit last minute feedback from these new audiences.

Upon my return to the U.S I will make final adjustments to my app and write documentation explaining the technical components to my software. Finally, I will release the software publicly online free of charge.

Sustainability:

By the end of this summer, we aim to have developed a functioning digital dictionary website and mobile app with a unified dictionary database. With enough funding to keep the website and app online for several years beyond my involvement, language scholars from Khyerab Yargey Tsogpo in Sikkim as well as Dr. Holmes-Tagchungdarpa's extensive network of academics will contribute to dictionary content, whenever and wherever they are.

My student network will also be crucial to the sustainability of this project. Students in the computer science club and computer science department at Occidental College will volunteer their programming skills to expand on the website and app. Furthermore, they will handle any technical problems that arises in the future. If they are unable to I can easily step in to fix any issues.

As my software will be released for free online, my dictionary framework can be easily adapted for other endangered languages inside and outside of Sikkim. Many other academics, researchers and concerned individuals can utilize my framework to develop and deploy their own language learning resource and try to save their languages from extinction. Additionally, I will aim to make this framework approachable by individuals with a non-technical background as well, having already been approached by one language scholar interested in this platform.

Timeline:

June 1st - Mid June (USA)

Prepare the website by migrating the current infrastructure to the new one that better supports the mobile version of the website and a potential app version of the website.

Mid-June to End-June (India)

Spend several days each week coordinating with dictionary content contributors while also negotiating with dictionary copyright holders. In the remaining time, interview a variety of users and understand the demographic of the potential users.

July 1st to Mid-July (India)

Refine the website based off of feedback. Implement mockups of any new functions that are proposed by interviewees. Interview more users and solicit feedback or possible ideas for future expansion to the website and app. Promote the website to potential users.

Mid-July to End-July (USA)

Release the website to the public and write documentation for the website.

My Role:

As a senior majoring in computer science I have extensive experience programming and developing software. I have programmed everything from data structures and algorithms all the way to web design. Furthermore, I already have experience working on this project at Occidental College during the summer of 2018. During this time, I worked independently over a course of two months, prototyping an entire website from scratch.