

Documenting the Use of Iranian Sign Language (ZEI) in Kermanshah

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Abstract

We describe a sign language documentation project funded by the Endangered Languages Documentation Project (ELDP) in the province of Kermanshah, a city in west of Iran. The deposit at ELDP archive (elararchive.org) includes recording of 38 native signers of Zaban Eshareh Irani living in Kermanshah. The recordings start with an elicitation of the signs of the Farsi alphabet along with fingerspelling of some words as well as vocabulary elicitation of some basic concepts. Subsequently, the participants are asked to watch short movies and then they are asked to retell the story. Later, the participants have natural conversations in pairs guided by a deaf moderator. Initial annotations of ID-glosses and translations to Persian and English were also archived. ID-glosses are stored as a dataset in Global Signbank, along with a citation form of signs and their phonological description. The resulting datasets and one-hour annotation of the conversations are available to other researchers in ELDP archive.

Keywords: ZEI, Iranian Sign Language, language documentation, data elicitation

1. The Situation of Sign Language and the Deaf Community in Iran

Zaban Eshareh Irani (henceforth referred to as ZEI), also referred to as Persian Sign Language (Lewis, Simons & Fennig 2017) or Iranian Sign Language (Behmanesh, 2006) is a sign language used by the Deaf community in Iran. It has been observed that there is regional variation among ZEI signers from different provinces of Iran (Siyavoshi, 2017). However, this variation does not impede their mutual intelligibility.

Although people in the Deaf community in Iran use ZEI to communicate with peers, it is not yet on a par with other spoken languages in Iran. In some reports, the population of the Deaf community in Iran has been estimated to be around one million and half (Noori, 2008). In a more recent report, it is claimed that about three million Deaf and hard of hearing people live in Iran (ZEI workshop, 2015). However, there is no estimate available for the number of ZEI users in this country (Jepsen et al., 2015).

2. Earlier Linguistic Studies and Documentation Projects

Before 2006, there had been no studies on the linguistic description of ZEI. However, since 1960s, there were a few academic publications which only

focused on standardization of ZEI. This focus was under the influence of contact with American educators who were supporters of Signing Exact English or ‘S.E.E.’ Back then, publications had not gone beyond a four-volume dictionary in which the lexicon of the language is presented with Farsi, Arabic and English translations (Bahadori, 2005). Fortunately, within the past two decades, a few young Iranian linguists have put great effort to start and promote linguistic studies of ZEI. Sara Siyavoshi is one of those linguists who has started her research in 2006 as her MA thesis. In her thesis, she introduced the different aspects of morphology, syntax, and phonology of ZEI for the first time (2006). She continued her research on phonology and discourse analysis of ZEI (2009) and now she is working on semantics, narrative studies, and documentation of ZEI in the framework of cognitive linguistics (2015, 2017, 2019).

Ardavan Guity is another linguist who has put a lot of effort to support the use of natural sign language (ZEI in Iran's context) and training of ZEI interpreters. He and his co-authors have recently published two valuable books: *The Deaf book: an introduction to Iranian Sign Language and Deaf culture in Iran* (2020), and an *Introduction to Iranian Sign Language* (2021). These are both considered as the first attempts toward teaching and introducing the real and natural language of the Deaf community in Iran. At the moment, he is working on his PhD

dissertation project at Gallaudet University which is a grammatical sketch of ZEI. In order to do this, he conducted a fieldwork project to gather and document ZEI in six different cities in Iran: Tehran, Mashhad, Shiraz, Isfahan, Zahedan, and Tabriz.

3. The Start of the project with ELDP's Support

The present study is the documentation of ZEI as used in Kermanshah, a city in West Iran. In Iran, the standard spoken language is Farsi, but in Kermanshah, Kurdish holds this status. As outlined above, it is not the first documentation project carried out on ZEI. Guity has been documenting ZEI in different cities of Iran. However, western area of Iran is not among the regions that he selected. The present study was funded and supported by ELDP (Endangered Languages Documentation Programme)¹, a program which provides funds for linguists all around the world to do fieldwork and archive the collected data in order to preserve endangered languages, making data publicly available. ELDP also provides training for grantees so that they can start their documentation project with some knowledge of documentary linguistics in theory and methods. Before starting the project, the first author took part in a one-week fall school on theory and methods in modern language documentation focusing on the MENA region (Middle East and North Africa) held by ELDP in October 2018. The workshop addressed the type of equipment to use for data collection, using software to annotate and transcribe data, doing fieldwork, how to write and apply for grants. Moreover, lectures introducing documentary linguistics and lexicography were presented in the workshop. At the end of the training, each of the participants were encouraged to apply for a 'small grant' at ELDP. The first author, having been in contact with the Deaf community of Kermanshah during research for her PhD dissertation, applied for this grant together with the second author, and was fortunately awarded with the grant.

The project started in Kermanshah in September 2019 and ended almost a year later. However, ELDP has suggested that we continue the project and we like to do so. The main challenge here, though, is the pandemic. Before holding the recording sessions, the first author had some trainings and discussions at Radboud University, where researchers have had years of experience in studying sign languages and documenting NGT (Sign Language of the Netherlands). In the summer of 2019, the team of the project including the first author, Farzaneh Soleimanbeigi (a deaf linguist) and Sara Siyavoshi had a one-day training session with Ardavan Guity in which he shared his experience of working with

ZEI data in ELAN and documenting ZEI. We discussed what to record, how to record and decided about the number of participants. He also talked about ethical and cultural issues we should have in mind throughout doing the project and answered our questions.

Back in Kermanshah, the first author and Soleimanbeigi held a workshop in sign language at the Deaf center for members of the Deaf community and introduced our project, the importance of documenting their language as well as their contribution to this project. We also clarified the steps which we were going through to carry out the project and answered their questions at the end of the workshop. It was surprising for the two organizers to realize that many signers were not much aware of their own natural sign language as independent from Farsi, the main spoken language of the country. Knowing this led us to go into details and examples in order to make them aware that ZEI is not signed Farsi and has its own grammar and lexicon.

4. What was Recorded and How?

The total number of participants in this project was 36, from which 18 were female and 18 were male. The decision to have 36 participants was based on the fact that we would need to have deaf participants of different age groups and genders in order to obtain a representative sample from the community. We decided to record deaf participants in 3 age groups: young (18 to 30 years old), middle aged (30 to 50 years old) and elderly participants (over 50). The group of young participants included 6 females and 6 males and the same held for the middle aged and elderly group. The first author had a local deaf assistant (henceforth referred to as the moderator) whose one of her responsibilities was to talk and communicate with the deaf candidates and invite them to participate in the study.

A SONY FDR AX33 video camera was used to record videos. This camera records two videos at the same time. One in the maximum quality XAVC format (3840x2160 = 4K) and another in MP4 format (1280x720), both at 25 frames per second. Having this feature helped us a lot since we had small files ready for instant sharing plus high-quality files for further editing. We only used one camera to record the videos in this project, since the budget would not allow us to have two cameras. The camera was located in a 2-meter distance from the participants. That was the furthest distance we could put the camera considering the limitation of space we had. We would zoom instead since we believed the further we put the camera, the more participants would look at the lens. The seat arrangement was in a way for the participants to carry on natural

¹ <https://www.eldp.net/>

conversations and for their maximum frame to be captured with regard to their faces and body.

Two participants who had almost the same age were recorded in each session. Prior to recording, the participants received an explanation of the project, a consent form (which would be translated into ZEI by the moderator) to sign, and some training about the tasks. The first task had two parts. The first part was elicitation of the signs of the Farsi alphabet. This task was designed to elicit how the participants sign the ZEI manual alphabet, Baghcheban (which is a manual alphabet system accepted and used by ZEI signers of Iran), and to see if there is any variant of the ZEI alphabet which we already knew of. In the second part of the task, the participants were asked to fingerspell 23 words written on a paper. This task was aimed to see how the participants spell Farsi words and to check whether or not the way ZEI alphabet is signed changes in the context of words.

The second task was the production of 100 signs elicited by picture clues on a laptop screen. These pictures included the most common animals, colors, food, as well as some basic concepts related to family, home, and city life in the context of Iran. These concepts were selected by the common sense of the authors and our judgment based on cultural intuition.

The third task was storytelling. We played two different (silent) stories for each signer in a session: "The Pear Story" and the "The Other Pair" (Rozik, 2014). Signer 1, for instance would watch the Pear Story on a laptop screen and tell the story of the movie to her/his partner. The benefit of asking the signer to retell the story to his/her partner rather than to the camera is that when signers are signing to each other, they feel the need to use more details and therefore they use more natural signs. Likewise, signer 2 would watch the other story (The Other Pair) and retell it to his/her partner.

As the last task, the moderator asked questions about different subjects. The moderator was trained by Farzaneh Soleimanbeigi on a number of video calls. We had prepared some questions about daily issues for the Deaf community in order to encourage them to sign in a natural context. The questions were asked only to inspire them to sign and there were not any true or false responses. Almost 16 hours of natural conversations were recorded in this task. Finally, in addition to the four tasks, we also recorded a gathering of the deaf community in the Deaf club in order to document more natural conversations without any interventions or interruptions from our side. The deaf community in Kermanshah get together in the deaf club (Kanoon)

once a week and they chat about their daily issues in life. This is where we recorded 1 hour of free interaction between about 14 Deaf people.

5. What was Annotated and How?

In this project, one hour of conversations between 18 signers in different sessions were annotated. In order to decide which sessions to choose to annotate from, we carefully went over all the recordings of conversations (Task 4). We decided not to start from the starting point of each conversation in task 4 to cover an hour of annotating. After reviewing the video files, we realized that interest in sharing ideas and the amount of linguistic information were not evenly distributed over the entire video session. Thus, we skipped some parts and started annotating some other parts that we realized the deaf person had entered into the discussion with more interest in a short period of time. In another word, the number of signs and variation of structures varied from one part of the videos to another. Our deaf colleague suggested that we consider the part of the video richer in signs.

To annotate the data, we used ELAN. At the time we started to annotate (May 2020), the pandemic had already struck and the research team could not meet in person regularly as it was planned. Therefore, we decided to meet online or talk on the phone when it was necessary to discuss things together. Difficulties arose when trying to send large video files. The low speed of internet connection in different areas of Iran was another technical difficulty.

In annotation phase, Soleimanbeigi (being a native signer) annotated most of the conversations and wrote ID-glosses and sentence translations in Farsi. Siyavoshi was responsible for double-checking the ID-glosses as well as sentence translations and she also translated ID-glosses into English. Finally, the first author translated the Farsi sentences into English and added some notes in the note tier of ELAN where ever an explanation was needed. It took almost 97 hours to annotate one hour of recordings.

ID-glosses were documented in a new dataset for ZEI in the lexical database Global Signbank², along with citation forms selected from the elicited data. Global Signbank was the only available option for hosting data in an existing multilingual database, and that it provides links to ELAN (by offering an ECV, external controlled vocabulary, for glossing in ELAN). The citation forms were re-created for the Signbank. We recorded the most frequent signs from a search result in ELAN. We aim to describe these signs in terms of their phonological and semantic properties in future.

² <https://signbank.cls.ru.nl>

Once we were done annotating the videos (Early October), the first author prepared the metadata in Lameta³, checked the file naming according to ELDP conventions and sent the ELAN files along with all the source videos in MPEG-4 (h264) format to Radboud University, where all data were uploaded to the ELAR archive.

6. The Preliminary Results

A very brief look at the data collected in this study shows that three minor differences can be observed between the other variants of ZEI studied so far and the variant signers use in Kermanshah:

1. Some signs are different from the way they are signed in Tehrani (the capital city of Iran) ZEI which has been studied the most. These include the signs for “teacher”, “man”, “news”, “village”, “cheating”, “exam”, “train”, and “math” (An example is provided in Figures 1 and 2).
2. A few alphabet letters are finger-spelled differently between participants from the way they are signed in Tehrani ZEI: te [t] , çe [tʃ] , dâl [d] , ze [z] , že [ʒ] , fe [f] , and kâf [k] (here, shown with transcribed Persian alphabet followed by their corresponding IPA symbols). What is surprising is that more than one sign alphabet for some letters was observed in videos. A possible explanation for this might be that the deaf signers in Kermanshah have less often been to school than those in Tehran or maybe they have been to mainstream (hearing) schools instead. Consequently, since there was no one to teach them Baghcheban alphabet, they had learned these signs from each other, apparently with a wider range of variability⁴ (An example is provided in figures 3 and 4).
3. The mouth patterns of some signs were different from those of Tehrani ZEI. We hypothesize that this is due to the use of Kurdish, which is the local spoken language in Kermanshah. It is notable that Fingerspelling is based on Farsi alphabet letters and the language that is used for teaching at schools. Kurdish is used as the spoken language in Kermanshah and does not have written form, therefore we cannot

claim that the different fingerspelling of some manual alphabet is based on Kurdish.



Figure 1: The sign for "teacher" in Kermanshah.



Figure 2: The sign for "teacher" in Tehrani ZEI⁵



Figure 3: The sign for letter "te" [t] in Kermanshah



Figure 3: The sign for letter "te" [t] in Tehrani ZEI⁶

³ www.lameta.org

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we cannot claim that the different fingerspelling of some manual alphabet is based on Kurdish.

⁵ . The figure is taken from Soleimanbeigi, et al. 2021

⁶ . The figure is taken from Soleimanbeigi et al. 2021

7. Future Plans

We are currently planning to continue recording more signers having natural conversations (doing task 4), with more participants from a wider range of age groups. To make this possible, at present this still involves making sure they are vaccinated completely against covid-19, and that it is safe for them and us to sit in a room with other people during the recordings. For that reason, it is hard to estimate when data collection will be completed.

Outside this project, one of the plans is to apply for another Small Grant at ELDP to document other variants of ZEI in other Western provinces of Iran which are less studied, like Ilam and Kurdistan.

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