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Mutual intelligibility of a Kurmanji and a Zazaki dialect spoken in the province of Elazığ, Turkey

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Abstract: We present the first results of a large project concerned with the mutual intelligibility between Zazaki and Kurmanji dialects spoken in Eastern Anatolia. There is an ongoing debate on the classification of Kurmanji and Zazaki as separate languages or as dialects of the same language, Kurdish. However, there is no scientific study of how well speakers of Zazaki and other dialects of Kurdish can understand each other. In this paper, we present the results of a pilot investigation where we tested the mutual intelligibility of 69 Kurmanji and Zazaki participants by means of a word translation task and asked the participants to estimate how well they could understand the other language variety. The results showed that overall the mutual intelligibility was rather low. There was a significant interaction between the effects of gender and language. Zazaki males identified more words correctly than Kurmanji males while Kurmanji females had higher intelligibility scores than Zazaki females. We suggest linguistic (lexical) and non-linguistic (attitudes and amount of exposure) explanations for the intelligibility results. We also have a closer look at the intelligibility of individual words to gain a greater understanding of the reasons for the asymmetric intelligibility results.

Keywords: Kurdish; Kurmanji; mutual intelligibility; translation task; Zazaki

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1 Introduction

Turkey is a large country with a rich history, which is reflected in the linguistic diversity among its inhabitants. Turkish is the national language and the mother tongue of approximately 66 million people in Turkey, which equals 85% of the population (Buran and Yüksel Çak 2012). However, there is also a large number of local and minority languages, including Arabic, Albanian, Armenian, Bosnian, Circassian, Georgian, Hamsyn, Judea, Kurmanji, Laz, Pomak, Romaic, Syriac, and Zazaki (Buran and Yüksel Çak 2012; Simons and Fennig 2017; Uzun 2012). These languages belong to different language families and according to Ethnologue (EGIDS¹) many of them have very few speakers in Turkey and the numbers of users are decreasing. Therefore, they are in danger of dying out within the near future and the need for more knowledge about their use and position in society is crucial.

The present paper focuses on the two minority languages with the largest numbers of speakers in Turkey, Kurmanji and Zazaki,² and in particular, we are interested in measuring how well speakers of Kurmanji and Zazaki can understand each other's languages. Both languages belong to the Northwestern Iranian branch of the Indo-European language family. While Kurmanji is classified as a dialect of Kurdish language, the position of Zazaki has been a controversial issue for many years (see Aratemür 2011; Koç 2011). Even though Zazaki is widely accepted to be a separate Iranian language (Gippert 1996; Paul 1998; for linguistic differences between Zazaki and Kurdish dialects see Gippert 2008), some studies (e.g. Sheyholislami 2017) classify Zazaki as a dialect of Kurdish language without any linguistically acceptable arguments. The relationship between the two languages is blurred by the fact that Kurmanji has had a large impact on the Zazaki language due to the geographical closeness and centuries of interaction and also by the fact that a majority of Kurmanji speakers identify Zazaki speakers as ethnic Kurds (Kehl-Bodrogi 1998: 116). In addition to cultural and socio-political criteria, linguistic distances and mutual intelligibility is often used as an important criterion to distinguish between languages and dialects (Gooskens 2018). However, since so far there is no clear linguistically based study dealing with the position of the two languages, we aim to contribute to the discussion regarding the relationship between Kurmanji and Zazaki with the present study.

In general, it can be stated that the position of the two languages is weak. Both languages assigned status 6b 'threatened' on the EGIDS scale, zero indicating the strongest status ('national') and 10 being assigned to extinct languages (Lewis

1 <https://www.ethnologue.com/about/language-status>.

2 We refer to Kurmanji and Zazaki as languages throughout the paper even though their status is uncertain and some scholars consider them dialects of the same language (see text).

and Simons 2010).³ Knowledge about how well speakers of Kurmanji and Zazaki can understand each other and which factors play a role in their mutual understanding is of great importance for Turkish language policy and language planning concerning the two languages.

We present the first results of a larger project on mutual intelligibility between Kurmanji and Zazaki languages spoken in the province of Elazığ where the highest concentration of speakers can be found. While some studies on the mutual intelligibility between Turkish and other Turkic languages have been carried out (e.g., Öztürk 2008; Sağın-Şimşek 2014; Sağın-Şimşek and König 2012; Tekin 2012), this is the first mutual intelligibility study involving Kurdish and Zazaki dialects.⁴ The aim of our project is to test the mutual intelligibility of a large number of Kurmanji and Zazaki dialects by means of various tests, but here we focus on the mutual intelligibility between two Kurmanji and two Zazaki dialects spoken in villages in a geographically small area along the Keban Dam, approximately 60 km to the east of the capital of the province. Because of the closeness of the villages, we expect some level of mutual intelligibility, since the inhabitants are likely to have had exposure to each other's languages and because the dialects are likely to be more similar than the dialects that are geographically further apart. Before going into details about the investigation, we provide some more information about the Kurmanji and Zazaki languages.

1.1 Kurmanji and Zazaki

'Kurdish' is an umbrella term that refers to a bundle of closely related Northwestern Iranian varieties (Eppler and Benedikt 2017; Haig and Matras 2002; Paul 2008), spoken in a large contiguous area that extends from Turkey into Iraq, Iran, and Armenia (McCarus 2009: 587). The question of which varieties should be included under the term 'Kurdish' is still under discussion and this discussion is mostly related to the question whether Zazaki should be taken under the label 'Kurdish' or as a separate language (Blažek 2013; Buran and Yüksel Çak 2012; Haig and Öpengin 2014). Therefore, we aim to contribute to this discussion by analyzing mutual intelligibility of two Iranian varieties, Kurmanji and Zazaki. However, researchers

3 On UNESCO Interactive Atlas of the World's Languages in Danger, Zazaki assigned as *vulnerable* ('most children speak the language, but it may be restricted to certain domains, e.g., home') (<http://www.unesco.org/languages-atlas/index.php>).

4 Arpa (2012) measures the intelligibility of Kurmanji by Zazaki speakers from six different cities in which Zazaki is natively spoken, asking 10 Zazaki speakers to translate 10 Kurmanji sentences. Mirmukri et al. (2019) examines the mutual intelligibility between two Kurdish dialects, Mahabadi spoken in West Azerbaijan and Badrei in Ilam Province of Iran.

disagree to some extent as far as the precise characterization of the languages and relationship to other languages are concerned.

Language varieties can be defined either as dialects or languages depending on the definition (Gooskens 2018). Kloss (1967) introduced the terms *Ausbausprache* (language by development) and *Abstandsprache* (language by distance) for analyzing and categorizing language varieties that are closely related and often used within the same society. In an *Ausbau* definition, ‘languages’ and ‘dialects’ are social constructs definable only in terms of their socio-political and cultural status and breadth of use, and they have little to do with independently identifiable structural entities. In terms of *Ausbau* definition, we can say that due to mostly political reasons, Zazaki is considered to be a dialect of Kurdish. Because in the Kurdish nationalism, which arose in the beginning of 20th century, the Zaza must be considered part of the Kurdish nation since in the nation-state ideology, a multiethnic and multilingual nation is by definition unthinkable (Kehl-Bordrogi 1998: 116). Therefore, Kurmanji nationalists in Turkey claim ‘the Zaza as their own to swell their numbers’ (Andrews 2002: 122). Beside political reasons, other sociological factors support the characterization of Kurmanji and Zazaki languages. The number of Kurmanji speakers in Turkey is higher than that of Zazaki speakers (Buran and Yüksel Çak 2012; Simons and Fennig 2017) and the size of the area in which Kurmanji is spoken is larger than the Zazaki area (Buran and Yüksel Çak 2012). Therefore, in Turkey Kurmanji has a stronger position than Zazaki. The first local language used on the Turkish national multilingual channel TRT6 was Kurmanji, and more time is allocated to Kurmanji than to other minority languages; Kurmanji has 23 h of daily broadcasting time, while Zazaki only has half an hour. Until recently, Zazaki was regarded as a dialect of Kurdish in schoolbooks prepared by Ministry of National Education (see Yıldırım et al. 2015a, 2015b). However, in the new edition of the books this has changed.⁵ These facts all pave the way for Kurmanji people, especially nationalist ones, to see Zazaki as a dialect of Kurdish. According to Kaya (2011), a majority of Zazaki speakers also identifies themselves as ethnic Kurds, and Paul (2008) states that many speakers of Zazaki (and Gorani) consider their language as ‘a variety of Kurdish’. However, our observation in the

⁵ In previous editions, Zazaki books were published under the title *Kurdî* “Kurdish”. However, the last edition of the book is titled as *Zazakî* “Zazaki”. In the last couple of years, the government’s viewpoint on Zazaki seems to have changed, as the former Ministry of Education Ömer Dinçer says: “When we started the Zazaki courses in schools, we considered Zazaki as a variant of Kurdish. In fact, this was the belief of the ones who prepared the books and we followed them. But from now on when we prepare new books, we will consider Zazaki a separate language, not as a variant or a dialect of Kurdish ...” (our translation) in his conference speech in Bingöl University in 2012 (<http://www.zazaki.net/yazi/kimligimiz-ve-dilimizin-tanimlanmasi-bize-aittir-266.htm> 09.12.2020/ 12.05).

field was the exact opposite. The Zazaki participants in our study claimed to be a different ethnic group and considered Zazaki as a separate language.

In an *Abstand* definition, one language variety is called an *Abstandsprache* with respect to another language variety if the two are so different from each other that they are in fact different languages. Kloss (1967) left unspecified exactly how the differences between two language varieties are to be measured objectively, presumably because he lacked the tools to do so. Therefore, Trudgill (2000) introduced the intelligibility criterion. According to this definition, dialects are mutually intelligible varieties, whereas languages are so linguistically different that their speakers are unable to understand each other. So far, little research has been carried out on the linguistic differences between Kurmanji and Zazaki and the level of mutual intelligibility between the speakers of the two languages. According to our observation in the field, Kurmanji and Zazaki speakers communicate in Turkish as a lingua franca when they encounter speakers of the other language. It is not clear, however, whether this choice is driven by the fact that Turkish is the dominant language in Turkey or whether Kurmanji and Zazaki are so different that receptive multilingualism (i.e. the speakers each speaking their own languages while being able to understand the other language, see Gooskens 2019) is not an obvious option (Andrews 2002: 122). The dominance of Turkish means that the speakers are probably not very often exposed to the language of the other community.

1.1.1 Kurmanjs and Kurmanji

Although the dialect division of the Kurdish language differs in different studies (for an overview see Haig and Öpengin 2014), researchers mostly agreed on the classification of three major groups: Northern Kurdish (Kurmanji), Central Kurdish (Sorani), and Southern Kurdish (Kelhuri, Kirmashani, Feyli) (see Figure 1). Among these, the Kurdish dialect that is spoken in Turkey is Kurmanji.⁶ Although Kurmanjs mostly live in the Eastern and Southeastern Anatolia region, due to the migration in the last decades, they have spread all over Turkey, especially to the big cities such as İstanbul, Ankara, İzmir and Bursa. Besides, due to the social, economic and political migration, a significant number of Kurmanjs are living in Europe today (Haig and Matras 2002: 3).

The current size of the Kurmanji population in Turkey is a controversial issue. There is no recent official record regarding their population in Turkey. According

⁶ According to Andrews (2002: 112), Sorani is also spoken by a small number of speakers in Silvan and Siverek in Turkey.

to Ethnologue,⁷ the number of Kurmanji people in Turkey is 8,130,000. In Heper (2007), the number is estimated as 11,300,000, while the United States Center for World Mission estimates the number as 13,947,000 (Buran and Yüksel Çak 2012: 45). The only official record about Kurmanji populations in Turkey dates back to 1965. According to a census carried out in 1965,⁸ the number of Kurmanji speakers was 2,219,502 (Buran and Yüksel Çak 2012: 308). However, it is noteworthy to mention that Turkey's total population in 1965 was 31,391,421 (see Andrews 2002 and Buran and Yüksel Çak 2012 for details), almost one third of the current population (83,614,312, according to an address-based population registration system).

It can be asserted that the majority of the Kurmanji people living in Turkey are bilingual (Öpengin 2010: 32). Yet, Kurmanji is mainly used as a spoken language since the language of education is Turkish and Kurmanji does not have an official status. However, in the last decade, several initiatives to strengthen the position of Kurmanji supported by the government have been undertaken. In 2009, the multilingual TV channel TRT 6 (currently known as TRT Kurdî) started broadcasting in Kurmanji. In addition, Kurmanji course books have been prepared by the ministry of education and Kurmanji has been presented as an elective course in schools. Nevertheless, it can be claimed that the number of Kurmanji speakers is decreasing. Nowadays Kurmanji is mostly spoken in rural areas and the new generation with higher education has higher proficiency in the Turkish language than in Kurmanji and cannot transmit Kurmanji to the next generations in the same way as their parents did (Öpengin 2010: 32).

1.1.2 Zazas and Zazaki

Zazas originally live in Turkey and Zazaki is the only local language that is originally spoken in Turkey only (Keskin 2010). However, due to migration, Zazas have spread across Europe as well, especially to Germany, the Netherlands, Austria, France, Switzerland and Sweden (Keskin 2015: 94). In Turkey, Zazas live mainly in Eastern Anatolia, especially in cities located at the upper part of the rivers Euphrates and Tigris such as Bingöl, Elazığ, Tunceli, Erzincan, and Diyarbakır (see Figure 2). They are also scattered across the following areas: Sivas, Erzincan, Gümüşhane, Erzurum, Kars, Muş, Siirt, Malatya, Kayseri and Adıyaman (Arslan 2018: 52). Zazaki is the second largest local language in Turkey as far as number of speakers is concerned. However, the exact number of Zazaki

⁷ <https://www.ethnologue.com/language/kmr> (09.12.2020/ 12.23).

⁸ Andrews (2002: 112) states that in the 1965 census some of the Zazas, especially Alevi Zazas, was counted as Kurmanj.

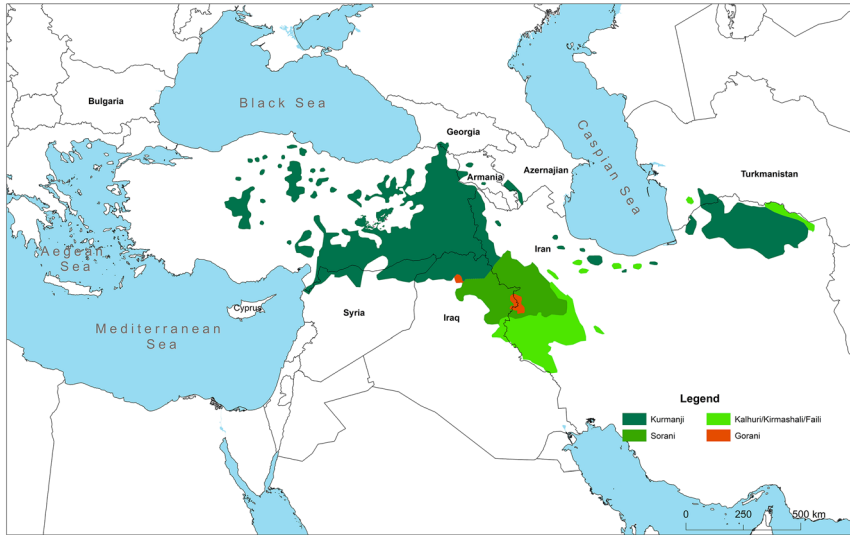


Figure 1: Map of Kurdish dialects in the world.⁹

speakers is unknown. It ranges from 3 to 6 million in different studies. According to Ethnologue,¹⁰ the population of Zazaki speakers is between 3–4 million, while in Keskin (2010), the number is estimated to be between 4–6 million.

Based on morphological, semantic and lexical differences, Keskin (2015: 8) divides Zazaki into three main dialects, namely Northern Zazaki, Central Zazaki and Southern Zazaki.

Like Kurmanji, Zazaki is mainly a spoken language. According to Keskin (2010) there is no standard variety of Zazaki, which is understood by all native speakers. Zazaki selective courses have been given in schools since 2013 and the multilingual TV channel TRT6 has half an hour Zazaki daily broadcasting time. Since 2011, Zazaki studies have been introduced at Turkey's universities (Mardin Artuklu University, Munzur University and Bingöl University, see Varol 2017). Despite these developments, we have observed that Zazaki people barely transmit their mother tongue to the next generations with a decreasing number of Zazaki speakers as a result.

⁹ The map is adapted from https://tr.m.wikipedia.org/wiki/Dosya:Kurdish_languages_map.svg 09.12.2020/ 16.16.

¹⁰ <https://www.ethnologue.com/language/diq> (19.10. 2020/15.09).



Figure 2: Map of Zazaki dialects in Turkey.

1.2 Research area: Elazığ

In our investigation, we focus on the Kurmanji and Zazaki languages spoken in the Turkish province of Elazığ, located in Eastern Anatolia, in the uppermost Euphrates valley. This province has a heterogeneous structure in terms of language diversity. It is located on the intersection point of the cities in which Kurmanji and Zazaki are natively spoken. Kurmanji and Zazaki speakers live in different areas throughout Elazığ. As a native language, Kurmanji is spoken in the districts Baskil, Karakoçan, Keban, Kovancılar, and Sivrice; and Zazaki is spoken in the districts Alacakaya, Arıcak, Maden, and Palu (see Figure 3). As becomes clear from Figure 3, both languages are spoken in a large part of the province, next to Turkish. They have substantial numbers of native speakers. They share language borders and there are even Kurmanji language islands in the Zazaki language area and vice versa as well as areas where both languages are spoken, so that speakers of the two languages in principle have easy access to exposure to each other's languages. Due to centuries of interaction, Kurmanji has had a profound impact on the Zazaki language, while the influence of Zazaki on Kurmanji is smaller due to the weaker position of the language.

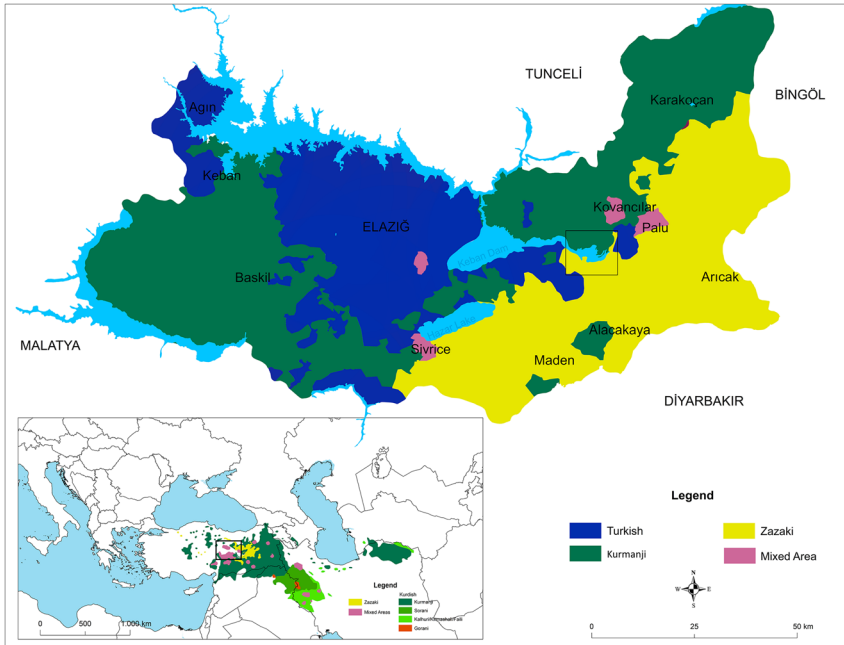


Figure 3: The languages spoken in the province of Elazığ.

1.2.1 Villages involved in the present study

For this study, the Kurmanji speakers were selected from Muratbağı and Yarımca villages in the Kovancilar district and the Zazaki speakers from Baltaş and Karasalkım villages in Palu district (see Figure 4). These villages have a reasonable number of native Kurmanji or Zazaki speakers. When disregarding the capital, the Yarımca and Baltaş villages accommodate two of the biggest Kurmanji populations in Elazığ (1,143 inhabitants in Yarımca and 1,138 in Baltaş). The populations of the Zazaki villages Muratbağı (331 inhabitants) and Karasalkım (765 inhabitants) are smaller. Using the main road, the distance from Muratbağı to Baltaş is 15.1 km and to Karasalkım 20.7 km. The distance from Yarımca to Baltaş is 17.4 km and to Karasalkım 23.8 km. The Kurmanji and the Zazaki villages are separated by the Keban Dam, which was built in 1975. The travel distances between the villages were even smaller before the dam was constructed.

The closeness of the villages means that the inhabitants in principle have relatively easy access to exposure to each other's languages. However, we have little information about the frequency and intensity of contact between inhabitants

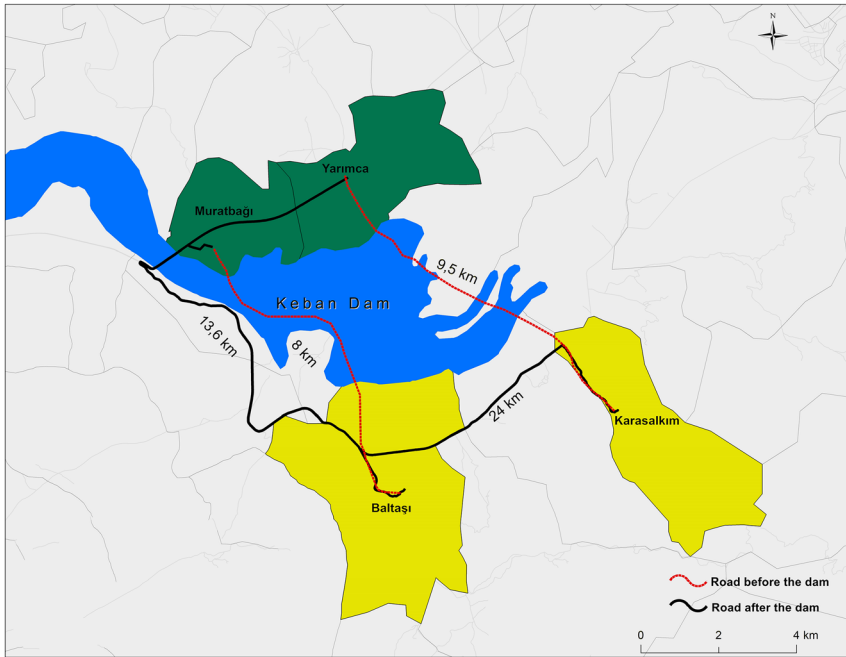


Figure 4: The villages included in the present investigation, Kurmanji Muratbağı and Yarımca, and Zazaki Baltaş and Karasalkım.

in the Kurmanji and Zazaki villages. The communities in the region share economic, sociological and cultural common grounds. Such common grounds are usually likely to result in contact between the inhabitants. However, since Turkish is mostly used for communication in the area, it is uncertain how much exposure speakers of Kurmanji and Zazaki actually have to each other's languages.

2 Methods

In previous research, various functional intelligibility tests have been employed for testing mutual intelligibility between closely related languages. Overviews can be found in e.g. Gooskens (2013) and Gooskens and Van Heuven (2021). A distinction can be made between tests of intelligibility at the text level and at the word level. Testing on the text level provides an impression of the overall intelligibility of a language. However, for the present investigation we chose to focus on the word level since we were interested in getting insight into the influence of

individual word characteristics on intelligibility, and in particular the influence of cognacy. In word intelligibility tests, single words are presented out of context and therefore we can be sure that the listeners cannot base their responses on information from the linguistic context. Previous research has shown that word intelligibility tests generally show high correlations with tests at the level of whole texts. For example, Gooskens and Van Heuven (2017) found correlations between $r = 0.73$ and 0.79 for written and spoken word translation tasks and cloze tests aiming at testing intelligibility at the text level. Word intelligibility tests have also been shown to be a good reflection of the intelligibility as perceived by the listeners themselves. Tang and Van Heuven (2009, 2015) report high correlation coefficients between scores obtained by judged intelligibility and results of functional intelligibility tests at the word and sentence levels: correlations ranged between $r = 0.77$ and 0.82 (with 225 combinations of test dialects and listener dialects). The high correlations between lower-order word intelligibility (word tests) on the one hand and tests of higher-order intelligibility (text level) on the other hand confirm claims made in the literature about the central position of words in the intelligibility of a closely related language (see e.g. Van Heuven 2008).

2.1 Selection of stimulus words

To test word recognition, a list was compiled of 41 frequent nouns and 41 frequent verbs. The nouns were selected from 14 thematic vocabulary lists in the Turkish frequency dictionary compiled by Aksan et al. (2017). In this dictionary, the 5,000 most frequent words in the Turkish language were selected from a 50-million word Turkish National Corpus (TNC).¹¹ The thematic vocabulary lists include lists of words related to animals, the body, food and drink, clothing, transportation, family, materials, time, sport, natural features and plants, weather, professions, colours, and opposites. A few words were selected from each list to add up to 41. When selecting the words, it was taken into consideration that the listeners were all from rural villages and therefore we chose words that could be assumed to be frequently used in the context of village life. By basing our selection on a Turkish word list, we made sure that none of the test languages would have a stronger influence on the selection of test words than the other. If we had for example compiled the list in Kurmanji and then translated the list into Zazaki, Kurmanji would probably have had influence on the choice of words in the Zazaki list. Another reason to choose this procedure was that no frequency lists of Kurmanji and Zazaki languages have been published so far. We expect that concepts that are

¹¹ See <http://www.tnc.org.tr>.

frequent in Turkish are also frequent in the Kurmanji and Zazaki varieties in the present investigation. The verbs included in the test were the infinitive form of the 41 most frequent verbs in Aksan et al. (2017).

Once the Turkish word lists had been compiled, native speakers translated the words into the two test languages, Kurmanji and Zazaki. The translators were instructed to use the most frequent words in their own native language (Kurmanji or Zazaki as spoken in the villages involved in this investigation, see Figure 4) when translating the Turkish words. The translations were checked by three Kurmanji and three Zazaki natives from the same areas. Only when there was full agreement about the translations, the words were included in the test. In Appendix B, the full list of words included in the investigations is provided.

2.2 Word intelligibility test

The experimental part of the investigation consisted of two parts, one for testing the intelligibility of nouns and one for testing verb intelligibility. For testing intelligibility, we developed a translation task for the listeners to carry out. First, the nouns and then the verbs in their infinitive form were presented to the listeners in the same random order. Since the research leaders did not always understand the words in the native language of the listeners, the listeners were asked to translate the words orally into Turkish. This was unproblematic since all listeners were bilingual, the Turkish language being the dominant language in official Turkish life. The research leader noted down on a form whether the translation was correct (1 point) or incorrect (0 points). There was also the possibility of assigning half or a quarter of a point to the translation in case this could be considered only partially correct. For example, the Kurmanji word for ‘to work’ *şixulîn*¹² was sometimes translated into Turkish *meşgul olmak* which has a slightly different semantic meaning ‘to be occupied with’. Such a translation was assigned half a point. Translations with an even smaller semantic overlap was assigned a quarter point, for example the word for ‘light’ Kurmanji *ronî* was sometimes translated into Turkish *güneş* ‘sun’ by the Zazaki speakers, probably because of influence from the Zazaki word *roc* ‘sun’.

After the nouns, 41 verbs were presented in the same random order to all listeners and they were asked to translate these verbs in a similar manner as for the nouns.

¹² For the sake of clarity, we used general orthographic presentations of the words throughout the analysis. For the list of words in phonetic transcription, see Appendix B.

The words were read aloud on site by a native speaker of Kurmanji in the dialect forms used in the area of Kovancilar north of the Keban Dam to the Zazaki listeners and by a native speaker of the Zazaki dialect form spoken in the Palu area south of the Keban Dam to the Kurmanji listeners. The speakers read aloud each word in a clear voice and repeated the word once if requested by the listener. When the listener had responded and the researcher had noted down the score (1, 0.5, 0.25 or 0) for the translation, the native speakers proceeded to read aloud the next word until all words had been tested. The advantage of this procedure was that the listeners did not have to wear a headset which some of them refused in a pilot setting. In addition, the level of literacy varied between the listeners. The procedure allowed illiterates to take part in the investigation (see also Gooskens and Schneider 2016) and the test to be performed in a speed that was convenient to the individual listeners.

2.3 Questionnaire

Before participating in the intelligibility test, the listeners were asked questions about their socio-geographic and socio-economic backgrounds (age, gender, education, and number of years that they lived inside and outside of the village). They were also asked questions about whether they could speak and understand Kurmanji and Zazaki and how often they heard the test language (on a scale from 1 ‘never’ to 5 ‘almost every day’). To test whether the listeners were able to predict their own level of intelligibility, we asked them to indicate on a scale from 1 ‘I do not understand anything’ to 5 ‘I understand everything’ how well they expected to be able to understand the test language (estimated intelligibility).

After the listeners had finished the intelligibility test, they were asked to rate the test language on five five-point attitude scales (beautiful–ugly, polite–rude, friendly–unfriendly, normal–strange, and modern–old fashioned). These scales represent various attitudinal dimensions as established by Zahn and Hopper (1985) and have previously been used for establishing the relationship between intelligibility and attitudes towards test languages (e.g. Schüppert et al. 2015).

2.4 Listeners

The two groups of listeners consisted of a random selection of inhabitants of the two Kurmanji and two Zazaki villages (see Figure 4). They were approached by the research leaders and agreed to participate in the investigation. The listeners were all born and raised in the villages and spoke the local Kurmanji or Zazaki variety as

their native language. In addition, they all spoke Turkish. Both parents of all the listeners used the local (Kurmanji or Zazaki) variety in daily life.¹³

Since the researchers tested a random selection of inhabitants of the four villages, they had various socio-geographic and socio-economic backgrounds. In Table 1, an overview of the backgrounds of the listeners is provided. The Zazaki and Kurmanji listeners had approximately the same gender distribution and age (means 49.8 and 48.8 years). In both groups of listeners, a majority had received no or very little schooling but there were more Kurmanji listeners (6) with a high school or university diploma than the Zazaki listeners (2). Also, the Kurmanji listeners had spent more time outside their own village than the Zazaki listeners (mean 9.4 vs. 4.9 years), but all listeners had spent a minimum of 16 years in their own village. All listeners except for one Zazaki listener indicated that they did not

Table 1: Background of the listeners (see Section 2.4 and Appendix A).

	Listeners					
	Zazaki			Kurmanji		
	Female	Male	Total	Female	Male	Total
Number	16	20	36	13	20	33
Mean age (range)	51.4 (36–78)	48.4 (16–74)	49.8 (16–78)	43.4 (16–78)	52.2 (28–85)	48.8 (16–85)
Mean number of years lived in village (range)	44.6 (19–78)	44.5 (16–74)	44.6 (17–78)	31.9 (16–47)	44.2 (20–66)	39.3 (16–66)
Mean number of years lived outside village (range)	6.7 (0–40)	3.5 (0–22)	4.9 (0–40)	11.6 (0–25)	8.0 (0–26)	9.4 (0–26)
Level of education (N)						
University	0	3	3	1	0	1
High school	0	3	3	0	1	1
Middle school	0	4	4	1	5	6
Primary	6	9	15	6	11	17
None	10	1	11	5	3	8
Speak test language (N)						
No	0	0	0	0	0	0
A little	1	0	1	0	0	0
Yes	12	20	35	13	20	33
Understand test language (N)						
No	15	12	27	9	13	22
A little	1	8	9	4	6	10
Yes	0	0	0	0	1	1

¹³ Two Kurmanji and one Zazaki listener were excluded from the analysis because their mother was not a native speaker of the local variety.

speak the test language. A majority also said that they did not understand the test language, but in both groups, approximately a third of the listeners said that they understood a little.

2.5 Procedure

The listeners were tested individually on a voluntary basis and did not receive any enumeration. The Kurmanji listeners were all tested by a male native speaker of the Zazaki variety. In the case of the Zazaki listeners, two native Kurmanji speakers were involved as research leaders. The female listeners felt uncomfortable when being tested by a male and therefore a female speaker of Kurmanji tested the female listeners and a male tested the male listeners.

First, the research leaders explained the purpose of the investigation to the listeners and made clear that they could withdraw from participation at any point during the testing session. Next, they read aloud questions A to D of the questionnaire (see Appendix A) and noted down the answers given by the listeners.

After that, the actual testing began. The research leaders explained that there would be a noun section and a verb section and the two grammatical groups were illustrated with examples. They then read aloud each of the 41 nouns in the test language and noted down the translation scores. Each test word was read aloud once and sometimes it was repeated once if the listeners asked for it. After the nouns, the procedure was repeated for the verbs. The same word order was applied to all participants.

Finally, the attitude scales were explained to the listeners (part E of the questionnaire) and they were asked to judge the test language that they just heard on the five scales. The research leaders noted down the judgments.

3 Results

In Section 3.1, we present the results of the two measures of intelligibility: overall functional intelligibility results (Section 3.1.1) and intelligibility as estimated by the listeners before they took part in the functional intelligibility experiment (estimated intelligibility, Section 3.1.2). In Section 3.2, we look at the relationship between the intelligibility results and the measures of exposure (Section 3.2.1) and attitude (Section 3.2.2). In Section 3.3 we focus on a subset of the data with the aim of gaining a better understanding of the factors underlying the intelligibility results. We compare cognates to non-cognates (Section 3.3.1) and we look at word pairs that show an asymmetric intelligibility (Section 3.3.2).

3.1 The overall mutual intelligibility of Kurmanji and Zazaki

3.1.1 Functional intelligibility

Figure 5 presents percentages of correctly translated words for male and female Kurmanji and Zazaki listeners. The data were averaged over the 41 nouns and 41 verbs. The scores are quite low. With an exception of the translations by male Zazaki listeners (20.7% correct), all mean word translation scores are below 15 percent.

A two-way ANOVA was conducted that examined the effect of gender and listeners' language on the level of intelligibility. A simple main effects analysis showed that the difference between Kurmanji (14.5% correct translation) and Zazaki listeners (14.3% correct) was not significant ($F [1, 65] = 0.010, p = 0.919$). The male listeners translated significantly more words correctly (17.5% correct) than female listeners (11.3%), ($F [1, 65] = 6.483, p = 0.011$). There was a statistically significant interaction between the effects of gender and language on the level of intelligibility ($F [1, 65] = 7.388, p = 0.007$). A dependent sample t-test showed that the Kurmanji female listeners performed significantly better (14.8% correct) than the Zazaki female listeners (7.8% correct) ($t = 5.764, p < 0.001$) while the Zazaki male listeners performed better (20.7% correct) than the Kurmanji male listeners (14.3% correct, $t = 6.607, p < 0.001$).

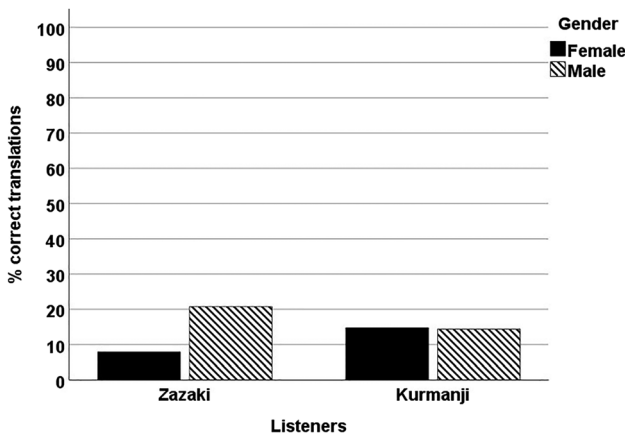


Figure 5: Mean percentage correct translations, broken down for gender and language of listeners.

3.1.2 Estimated intelligibility

As explained in the beginning of Section 2, listeners are often well capable of judging how well they can understand a closely related neighbouring language. We tested how the Zazaki and Kurmanji listeners estimated their own ability to understand the neighbouring language before they took part in the functional intelligibility test. The listeners were asked to indicate on a five-point scale from 1 ‘I do not understand a word’ to 5 ‘I understand everything’ how well they expected to understand the test language (estimated intelligibility).

The estimated intelligibility scores are presented in Figure 6. We first of all note that the scores are quite low. Most mean scores are below 2 on the five-point scale and also the group with the highest score, the Kurmanji men, only estimate their own ability to understand Zazaki with a mean score of 2.3.

A two-way ANOVA was conducted that examined the effect of gender and native language of the listeners on the level of estimated intelligibility. This analysis showed that Kurmanji listeners are more optimistic (mean 2.0) about their own ability to understand the neighbouring language than the Zazaki listeners (mean 1.6). The differences are significant at the 0.05 level ($F [1,65] = 4.4749$, $p = 0.033$, $\eta_p^2 = 0.068$). Furthermore, men are more positive about their own abilities than women (mean 2.1 vs. 1.3). This difference is significant at the 0.01 level ($F [1,65] = 13.360$, $p = 0.001$). No interaction was found between gender and listeners’ language ($F [1,65] = 0.133$, $p = 0.000$).

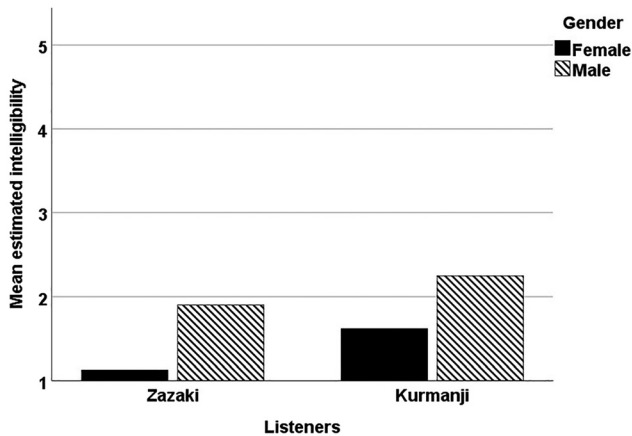


Figure 6: Mean estimated intelligibility scores on a scale from 1 ‘I do not understand a word’ to 5 ‘I understand everything’ as a function of gender for the Zazaki and the Kurmanji listeners.

To get an impression of how well the listeners can estimate their understanding of the test language, we compare the results to the mean functional intelligibility scores. It is not possible to determine to which extent the listeners can estimate intelligibility in an absolute sense, since different methods are used for the measurements. However, it is apparent that both the functional and the estimated intelligibility scores are quite low. A comparison of the functional and estimated intelligibility scores show that in general the relative scores of the functional and estimated measurements show the same pattern: Kurmanji listeners understand more than Zazaki listeners and Kurmanji women understand more than Zazaki women. However, there is one major difference. When tested functionally, Zazaki men perform better than Kurmanji men (mean scores of 23.0 and 18.1%), but when asked to estimate their intelligibility of the test language, Kurmanji men score slightly higher (mean 2.3) than Zazaki men (mean 1.9). This difference is not significant ($t = -1.215$, $p = 0.23$). When tested functionally, Kurmanji women perform just as well as the Kurmanji men, but there is a difference between the Kurmanji men and women in the case of estimated intelligibility. The men are more positive about their ability to understand Zazaki than the women. This difference is significant ($t = -2.034$, $p = 0.05$).

We can also compare the mean functional scores and the estimated intelligibility scores by correlating them. If we correlate the scores of all 69 listeners, we get a significant score at the 0.01 level ($r = 0.37$). When looking at the correlations broken down for language and gender we get significant correlations between the mean intelligibility scores and estimated intelligibility at the 0.05 level for Zazaki women ($r = 0.61$), Kurmanji women ($r = 0.64$) and Zazaki men ($r = 0.51$). However, for the Kurmanji men the correlation is non-significant ($r = -0.09$). It seems that Kurmanji men are less good at estimating their own ability to understand the neighbouring languages than the other listener's groups.

3.2 Extra-linguistic determinants of intelligibility

In general, the more similar two languages are, the easier it will be for the speakers to understand each other. We will have a closer look at lexical differences between the Kurmanji and the Zazaki words in Section 3.3. However, not only linguistic differences determine how well a listener is able to understand a closely related language. In Gooskens (2019) an overview is provided of extra-linguistic factors that may determine intelligibility. In this section, we will look at two extra-linguistic factors that have previously been shown to be important determinants of intelligibility, namely exposure and attitudes to the test language.

3.2.1 Exposure

Exposure to the test language has often been shown to be crucial for the intelligibility of a closely related language. For example, Gooskens and Van Heuven (2019) found a correlation of $r = 0.90$ between functional intelligibility as measured by a spoken cloze test and the mean exposure as measured on six scales. The more exposure to a language the better the listeners are at understanding the language because they learn some of the vocabulary and get used to sound correspondences between their native language and the related language. There are different ways of measuring exposure. Here we will first look at the relationship between age and intelligibility and next we will investigate the relationship between the exposure scores that the listeners gave when filling in the questionnaire and the mean intelligibility scores.

As became clear from Table 1, the listeners cover a large range of ages between 16 and 78 years. It is reasonable to assume that older listeners have had the chance to have more exposure to a neighboring language than young people. In addition, the older listeners are from a time when the dam had not yet been built and the distance between the villages was smaller (see Section 1.2.1). On the other hand, the roads and the means of transportation were of lower quality at that time.

The correlation between age and the mean functional intelligibility scores is non-significant ($r = 0.11$). When we correlate with the results broken down for language and gender, we still get non-significant correlations for all groups, except for the Zazaki men where the correlation is significant at the 0.01 level ($r = 0.65$). This means that Zazaki men get better at understanding the neighboring languages with age, while there are no clear age effect for the other groups.

In Figure 7, we present the mean exposure scores broken down for language and gender. In general, the listeners have little exposure to the neighbouring language in spite of the fact that the villages are geographically very close. Kurmanji listeners have more exposure to Zazaki than the other way round (mean exposure score 2.4 vs. 1.6 on a scale from 1 ‘no exposure’ to 5 ‘almost every day’). A one-way ANOVA showed that this difference is significant ($F [1,65] = 14.951, p = 0.000$). Men are more often exposed to the neighbouring language than women ($F [1,65] = 9.539, p = 0.003$). An independent sample t-test showed that the Kurmanji female listeners had significantly more exposure (mean score 2.2) than the Zazaki female listeners (mean 1.1, $p = 0.002$), while the difference between the men (Kurmanji 2.5 and Zazaki 2.0) was insignificant, $p = 0.059$. The interaction between gender and language of the listeners was not significant.

Looking now at the relationship between intelligibility and exposure scores, we see that even though the Kurmanji men are most often exposed to the test language they do not perform best on the functional intelligibility tests. The other

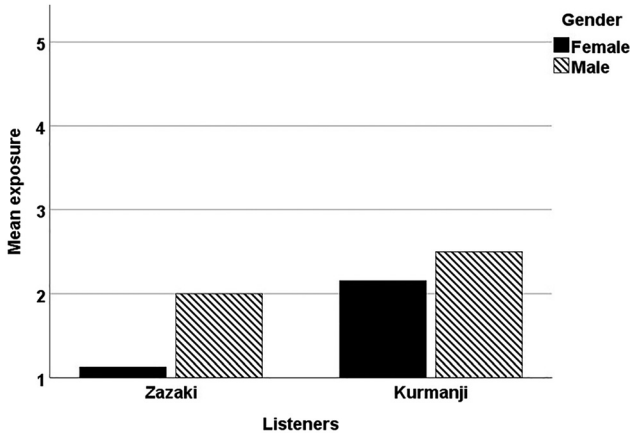


Figure 7: Mean exposure as a function of gender for the Zazaki and the Kurmanji listeners on a scale from 1 ‘never’ to 5 ‘almost every day’.

three groups follow the same patterns for intelligibility and exposure. The Zazaki women have almost no exposure and low intelligibility scores. The Kurmanji women have lower exposure scores than Kurmanji men ($t = -0.908$, $p = 0.37$) but their intelligibility scores do not differ significantly. The exposure scores of all listeners correlate significantly with the mean intelligibility scores at the 0.01 level ($r = 0.38$). When we correlate for each of the languages and genders separately, we get significant correlations at the 0.01 level for both Zazaki groups (women $r = 0.64$, men $r = 0.57$) and at the 0.05 level for the female Kurmanji listeners ($r = 0.67$). In the case of the male Kurmanji listeners the correlation is nonsignificant ($r = -0.19$). This confirms previous findings that in general listeners get better at understanding the neighbouring languages when they have had more exposure to the language. However, in the case of the Kurmanji men such a link is not found.

3.2.2 Attitude

Attitudes towards the test language is another factor that has repeatedly been mentioned in the literature as a factor influencing intelligibility scores (Delsing and Lundin Åkesson 2005; Schüppert et al. 2015). In Figure 8, the mean attitude scores across the five scale are presented, broken down for language and gender.

The Zazaki listeners are a little more negative towards the neighboring language than the Kurmanji listeners (mean across all scales 3.2 vs. 2.8). However, a two-way ANOVA showed that the difference was nonsignificant ($F [1,65] = 3.408$, $p = 0.069$).

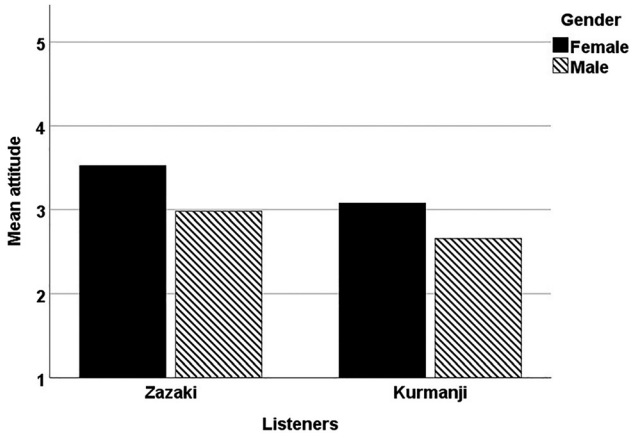


Figure 8: Mean attitudes (from 1 = most positive to 5 = most negative) across all scales as a function of gender for the Zazaki and the Kurmanji listeners.

Women are more negative than men (3.3 vs. 2.8). This difference is significant at the 0.05 level ($F [1,65] = 5.346, p = 0.024$). An independent t-test showed that the differences between Zazaki females (3.5) and Kurmanji females (3.1) was non-significant ($p = 0.081$) and also the differences between Zazaki males (3.0) and Kurmanji males (2.7) is non-significant ($p = 0.30$). The interaction between gender and listeners' language is not significant ($F[1,65] = 0.095, p = 0.759$).

When comparing the attitude scores with the intelligibility scores we would expect negative correlations. More negative listeners could be expected to get the lowest scores on the intelligibility test, since they may not be willing to make an effort to understand a language they have a negative attitude towards while positive listeners may be willing to make a larger effort. When comparing the data in Figure 8 to the mean intelligibility scores presented in Figure 5, this seems to be only partly the case in our data. The most positive listeners (the male Kurmanji listeners) are not the best at understanding. However, the most negative listeners (the female Zazaki listeners) also have the lowest intelligibility scores. To analyse the role of attitudes statistically, we correlated the mean intelligibility scores with the mean attitude scores. The correlation is significant at the 0.05 level ($r = -0.27$). However, when looking at each group separately, none of the correlations are significant. The link between intelligibility and attitudes therefore is rather weak. It seems that the listeners generally do not have very strong negative opinions about the other language, since they tended to use the middle of the scale. This results in low correlations.

3.3 Intelligibility of individual words

In Section 3.2, we saw that exposure plays an important role in explaining the intelligibility results. In this section, we will have a closer look at the intelligibility of (subsets of) individual words in order to gain a better understanding of which factors play a role in explaining the intelligibility results. In Section 3.3.1, we will compare cognates and non-cognates. In Section 3.3.2, we will have a closer look at individual cognates in an attempt to identify specific factors that may obstruct the recognition of words. In this context, it is especially revealing to look at word pairs with asymmetric intelligibility.

3.3.1 The intelligibility of cognate and non-cognate words

By identifying cognate words in Kurmanji and Zazaki, we can determine the lexical overlap of the two languages. The degree of lexical overlap between two languages is likely to be very fundamental for predicting the level of intelligibility. If two languages share no vocabulary, the languages are in principle not mutually intelligible unless the listeners have had exposure to the test language, and the larger the lexical overlap the larger the mutual intelligibility will be. However, the fact that a word is a cognate does not mean that the listener will always be able to match it with the counterpart in his own language. The pronunciation of cognate words in two related languages may have changed to such an extent that a listener will no longer recognize them as cognates.

To be able to investigate the role of cognacy for the mutual intelligibility of Kurmanji and Zazaki, we first need to identify cognate words in two languages. Since no prior study of the etymologies of Kurmanji and Zazaki words has been conducted, some difficulties were encountered while preparing the list of cognate words. The only etymological dictionary that could be used for such a list is Cabolov (2001, 2010), which gives detailed analysis of Kurmanji words, while for Zazaki, no such dictionary is found. Since Cabolov (2001, 2010) not only gives detailed information about Kurmanji words, but also mentions cognates in the related languages (such as Persian, Zazaki etc.), we have used his dictionary as the main source to prepare the list. For the words that are not found in this dictionary, we consulted several articles (e.g., Aratemür 2012; Cheung 2007; Keskin 2012; Selcan 2011). In two cases where we could not use etymological dictionaries to determine the cognacy of test words, words that are phonetically similar and semantically identical were listed as cognates even though there are no studies

mentioning them: Kurmanji *keştî*, Zazaki *keştî*¹⁴ ‘ship’ and Kurmanji *hez kirin*, Zazaki *hes kerdiş* ‘to love’.

Of the total number of 82 words used in the study, 38 are cognates, which equals 46.3% of the total amount. When analyzed according to word classes we see that more verbs than nouns are cognates in the two languages: of the 41 nouns, 15 are cognates (36.5%) and of the 41 verbs, 22 are cognates (56.0%).

In Figure 9, we present the intelligibility results for the cognates and the non-cognates. As expected, the percentage of correct translations of cognate words is higher (mean percentage of correct translation 20.4) than non-cognates (mean 9.3%). A two-way ANOVA showed that the difference is significant ($F[1,120] = 21.723, p < 0.000$).

Kurmanji men and women had the same level of understanding of the cognates, even though the men claimed to have more exposure to Zazaki than the women did (see Figure 7). In the case of the Zazaki, the men scored higher than the females, as could be expected from the exposure scores. Because of the higher exposure, Zazaki males were better at recognizing phonetic correspondences between two languages, i.e. Kurmanji *baran*, Zazaki *varu* ‘rain’ was translated correctly by 47.7% by Zazaki males, while none of Zazaki female participants had a correct answer.

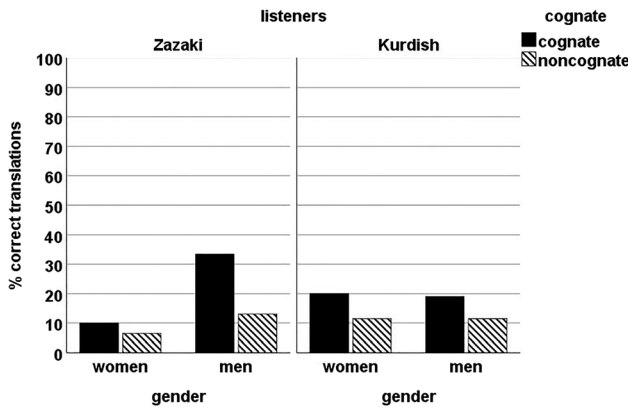


Figure 9: Mean percentages of correct translations of cognates and non-cognates for male and female Zazaki and Kurmanji listeners.

¹⁴ Cabolov (2001) mentions Kurmanji *keştî* ‘ship’ as a cognate with Persian *keştî* ‘ship’ but does not give any information about Zazaki *keştî*.

As expected, the percentages of correct translations were lower in the case of the non-cognates (Kurmanji listeners 11.9% and Zazaki listeners 7.40.0%). The difference is found among both men and women. The intelligibility of non-cognate words by Zazaki female listeners is 4.9% (cf. 11.0% for cognates), by Zazaki male listeners 9.8% (cf. for cognates 35.6%) and by Kurmanji female listeners 11.1% (cf. 19.8% for cognates), by Kurmanji male listeners 12.7% (cf. 20.9% for cognates).

The fact that all groups were able to translate some frequent non-cognates correctly shows that they must have some knowledge of the test languages. In principle, it is not possible to recognize a non-cognate without previous knowledge of the language. For example, 38.1% of the Kurmanji males and 15.4% of the females translated Zazaki *astor* ‘horse’ correctly and 18.2% of the Zazaki males and 12.5% of the females translated the Kurmanji non-cognate *hesp* correctly. However, the percentages of correctly translated non-cognates only reflect the exposure scores presented in Section 3.2.1 to a certain extent. Both Kurmanji men and women claimed to have more exposure to the other language than Zazaki listeners, but still the Zazaki men were just as good as the Kurmanji listeners at translating non-cognates. Asymmetric scores can often be explained by other factors, which will be discussed in the next section.

Finally, we also had a look at the differences between the percentages correct translations of cognate nouns and verbs. A two-way ANOVA showed that the difference between verbs and nouns is not significant ($F[1,143] = 0.867, p = 0.353$). However, in the next section we will discuss some differences in intelligibility of some individual verbs.

3.3.2 Asymmetric intelligibility

By having a closer look at word pairs that show asymmetric intelligibility, we may gain a better understanding of factors determining intelligibility. In this section, we will present examples of a number of such factors. It has previously been shown that linguistic factors may cause an asymmetric intelligibility between languages (for an overview see Gooskens and Van Heuven 2021). In Table 2, we present a list of words with a mean asymmetric intelligibility between the Kurmanji and the Zazaki listeners. We defined asymmetry as a difference between the mean scores for a word above 15% between gender groups in two languages.

There are 17 words in our list with asymmetric mean scores above 15%. Zazaki listeners had higher scores of 9 words, and Kurmanji listeners of 8 words. In most of the cases Zazaki female listeners had the lowest score which caused overall asymmetric scores. This could have given an explanation for the asymmetric

Table 2: The list of words that have asymmetric mean scores above 15% between the Kurmanji and the Zazaki listeners (top half nouns and bottom half verbs, in descending size of asymmetry).

Words	Kurmanji male (%)	Kurmanji female (%)	Zazaki male (%)	Zazaki female (%)	Asymmetric difference (%)
FARMER Kr. <i>cotkar</i> ; Zz. <i>rençber</i>	81.0	46.2	0.0	0.0	63.6 (Kr. > Zz.)
SOCK Kr. <i>gurik</i> ; Zz. <i>punc</i>	4.8	30.8	40.9	50.0	45.45 (Zz. > Kr.)
HAIR Kr. <i>por</i> ; Zz. <i>gijk</i>	0.0	0.0	40.9	37.5	39.2 (Zz. > Kr.)
AUTUMN Kr. <i>payîz</i> ; Zz. <i>payîz</i>	71.4	92.3	79.6	21.9	31.10 (Kr. > Zz.)
MOUTH Kr. <i>dev</i> ; Zz. <i>fek</i>	28.6	38.5	13.6	0.0	26.75 (Kr. > Zz.)
BRIDE Kr. <i>bûk</i> ; Zz. <i>veyv</i>	28.6	42.3	59.1	56.3	22.15 (Zz. > Kr.)
GRANDFATHER Kr. <i>bapîr</i> ; Zz. <i>pîrik</i>	59.5	69.2	59.1	28.1	20.75 (Kr. > Zz.)
BATHROOM Kr. <i>çerx</i> ; Zz. <i>seroşır</i>	4.8	0.0	31.8	12.5	19.75 (Zz. > Kr.)
SNOW Kr. <i>berf</i> ; Zz. <i>vor</i>	14.3	15.4	50.0	12.5	16.4 (Zz. > Kr.)
WC Kr. <i>kenife</i> ; Zz. <i>destawxane</i>	19.0	30.8	18.2	0.0	15.8 (Kr. > Zz.)
THREE Kr. <i>sê</i> ; Zz. <i>hirê</i>	42.9	0.0	64.8	9.4	15.65 (Zz. > Kr.)
TO UNDER- STAND Kr. <i>hukirin</i> ; Zz. <i>fehm kerdîş</i>	52.4	76.9	4.6	0.0	62.35 (Kr. > Zz.)
TO DIE Kr. <i>mirin</i> ; Zz. <i>merdîş</i>	4.8	0.0	95.5	25.0	55.85 (Zz. > Kr.)

Table 2: (continued)

Words	Kurmanji male (%)	Kurmanji female (%)	Zazaki male (%)	Zazaki female (%)	Asymmetric difference (%)
TO GIVE Kr. <i>dayîn</i> Zz. <i>deyiş</i>	4.8	7.7	81.8	25.0	47.15 (Zz. > Kr.)
TO RECOGNIZE Kr. <i>naskirin</i> ; Zz. <i>şırasnayış</i>	0.0	0.0	50.0	6.3	28.15 (Zz. > Kr.)
TO TALK Kr. <i>qezikirin</i> ; Zz. <i>qal kerdış</i>	29.8	34.6	9.1	0.0	27.65 (Kr. > Zz.)
TO LOVE Kr. <i>hezkirin</i> ; Zz. <i>hes kerdış</i>	76.2	100.0	100.0	43.8	16.2 (Kr. > Zz.)

intelligibility scores in our study, since the Zazaki female listeners had almost no exposure to the test language. However, the low exposure score could only explain the asymmetric scores for some of the words such as ‘mouth’, ‘to talk’ and ‘to understand’, which were translated correctly by none of the Zazaki female listeners (see Table 2). Yet, the same explanation cannot be found for other words. This shows that there is no 1 to 1 correlation between exposure and asymmetric scores. Thus, most of the asymmetric scores require an additional explanation.

We have identified some linguistic and non-linguistic factors that may have played a role, namely verb conjugation, knowing another language and synonyms. We will discuss these factors below.

3.3.3 Verb conjugation

One of the reasons for the asymmetric intelligibility of some word pairs is that the language structure of Zazaki gives an advantage to Zazaki speakers in understanding some Kurmanji verbs, while Kurmanji speakers do not have this advantage. In Kurmanji, the infinitive form of the verbs are similar to that of some conjugated forms (generally past and imperative forms) in Zazaki. In our data set, there are two examples. Kurmanji *hatin* means ‘to come’ or ‘they have come’ and Kurmanji *gotn* means ‘to say’ or ‘they have said’. Due to the similarities between conjugated forms of Zazaki and infinitives of Kurmanji, Zazaki speakers could infer the meaning of some verbs. On the other hand, the infinitive form in Zazaki

is different and therefore difficult for Kurmanji listeners to recognize. Therefore, the Kurmanji listeners have low scores for some of the words. For example, the infinitive form of the Zazaki verb ‘give’ is *deyiş* while the conjugated form for 2nd person imperative is *bîdn*. When Zazaki speakers were asked to translate the infinitive form of the Kurmanji verb *dayîn* ‘to give’, they could understand the meaning (males 81.8% and females 25.0%) since they associate it with the imperative 2nd person plural form of the verb *deyiş* (which is *bîdn*) which is similar to the Kurmanji infinitive (*dayîn*). The same situation applies for the verb ‘to die’ *mirin* in Kurmanji and *merdiş* in Zazaki (95.5% correct translations among male Zazaki listeners and 25% among Zazaki female listeners). Because Kurmanji *mirin* is very similar to 3rd person plural progressive form, *merni* ‘They are dying’ in Zazaki, Zazaki participants had higher scores than Kurmanji listeners.

3.3.4 Knowing another language

Knowing a language other than the test language may have an effect on intelligibility scores. In this study, listeners’ knowledge of Turkish helped them to understand some of the test words and in two cases and it resulted in asymmetric intelligibility. The situation was encountered in the example of the word for ‘farmer’ (Kurmanji *cotkar*; Zazaki *rençber*). Zazaki listeners did not understand the Kurmanji word, but the Kurmanji listeners were often able to understand the Zazaki word *rençber*, since the same word is used in Turkish as *rençber*.

Another example is the word for ‘three’ (Kurmanji *sê*; Zazaki *hirê*) for which the male Zazaki listeners had high scores (64.8%). The reason is probably that the game of backgammon is traditionally played with Persian numbers (*yek* ‘one’, *do* ‘two’, *se* ‘three’) which are also used in Kurmanji. Therefore, it may be easier for Zazaki male listeners to understand the Kurmanji word *sê* ‘three’ since they know the word from the game. The fact that only 9.4% of the Zazaki female listeners had correct answer is because the game is played by males in men’s coffee houses and therefore females are not exposed to this word.

3.3.5 Synonyms

When the test word itself is unfamiliar to the listener, a synonym word may often help them to give correct answers. This situation has been determined for four nouns and four verbs.

While the most frequently used word for ‘hair’ in the Zazaki dialect of our research area is *gjik*, the synonym Zazaki word *por* helped Zazaki speakers to understand the Kurmanji word *por*. None of the Kurmanji listeners had a correct answer, because they could not profit from a cognate synonym. The same

advantage explain the asymmetric scores for the words ‘sock’, ‘bride’, ‘grandfather’ and ‘WC’. The Kurmanji word *gurik* ‘sock’ and *bûk* ‘bride’ also exists in the Zazaki and Zazaki word *pînk* in Kurmanji. The word *destawxane* is a compound word, consisting of *dest* ‘hand’ + *aw* ‘water’ + *xane* ‘house’, all of which also exist in Kurmanji.

The verbs for ‘to recognize’, ‘to understand’, and ‘to talk’ in both languages are light verb constructions (LVC) which consists of a noun and a light verb *kirin* or *kerdiş*, meaning ‘to do’. Therefore, when there is a synonym for the first part of LVC in the source language, listeners may have an advantage during the test. For example, the Kurdish word *nas* exists in the Zazaki, the Zazaki word *qal*, and *fehm* in Kurmanji. Therefore, for the Kurmanji word *naskirin* ‘to recognize’ Zazaki participants had an advantage over Kurmanji participants and for the Zazaki word *fehm kerdiş* ‘to understand’ Kurmanji participants over Zazaki participants.

We could not find any explanation for the asymmetric scores of the words ‘autumn’ and ‘snow’. Interestingly, the word for ‘autumn’ is poorly understood by Zazaki female listeners (31.1%), even though the word is the same in both languages, *payîz*. The score of Zazaki male listeners (50.0%) for ‘snow’ could be explained by the exposure score, but Kurmanji participants claimed to have more exposure to the test language than Zazaki males.

4 Conclusion and discussion

We measured the mutual intelligibility of Kurmanji and Zazaki in a small area around the Keban Dam east of the capital of Elazığ in Eastern Anatolia. The measurements were carried out in two ways. We tested the listeners functionally with a word translation task and before the test, we asked them to estimate how well they could understand the other language on a 5-point scale. The results of the functional test showed no significant difference between the Kurmanji and the Zazaki listeners. However, when looking at the results for male and female listeners separately we found that Kurmanji female listeners performed better than Zazaki female listeners did. Part of the explanation for this asymmetry could be that the Kurmanji female listeners are less restricted than the Zazaki females when it comes to interaction with people from outside of their own community. Female Zazaki speakers tend to stay in their own village and have little contact with people from outside the village and our results also showed that they have a more negative attitude towards the test language than the other groups of listeners. Kurmanji females have more exposure to the test language than the

Zazaki females. During our data collection, we observed that due to religious and cultural reasons Zazaki female listeners have contact outside of their community only in restricted circumstances. They participated in our study only with the permission of other family members and with the condition that only female members of the research team communicate with them. These religious and cultural constraints result in low exposure to the Kurmanji language among Zazaki females. No similar situation was observed in Kurmanji females who participated in the study without permission from family members and any prior conditions imposed. The male listeners also show asymmetric intelligibility, but in the other direction: Zazaki males translate more words correctly than the Kurmanji males.

The estimated intelligibility scores showed roughly the same pattern as the functional intelligibility scores. However, the Kurmanji men were just as positive as the Zazaki men about their ability to understand the other language. We think that the explanation for this may be that many Kurmanji speakers regard the Zazaki language as a Kurdish dialect. Therefore, when they are asked to estimate how well they understand Zazaki some of them may not realize that this language is more different from their own language than they think.

Both the functional (means between 7.8% for Zazaki females and 20.7% for Zazaki males) and the estimated intelligibility scores (means between 1.1 for Zazaki females and 2.3 for Kurmanji males on a scale from 1 ‘I do not understand a word’ to 5 ‘I understand everything’) are rather low. It is possible to put the result into perspective by comparing them to the results of a similar word translation task involving 70 closely related European language pairs (Germanic, Romance and Slavic languages) carried out by Gooskens and Van Heuven (2017). The European investigation included different sets of words and the educational level was higher than in the present investigation, but still a comparison of the results provides an idea of how to interpret our results. The percentages of correctly translated words are lower in the present investigation than for all 70 European language pairs. This result gives support to scholars who regard Zazaki as an independent language rather than a Kurdish dialect (see Section 1).

The low level of intelligibility can be explained by the large number of non-cognates (37.8% of the test words). 37 of the European language combinations had higher percentages of non-cognates, but many of these language combinations involved languages that the listeners were familiar with from exposure or formal schooling. The Kurmanji and Zazaki listeners had little exposure to the test language which becomes clear from the answers that the listeners themselves gave to the question about how often they heard the language (means between 1.1 for Zazaki females and 2.5 for Kurmanji males on a scale from 1 ‘never’

to 5 ‘every day’). The small amount of exposure to other language varieties can be explained by the fact that Turkish is used as a lingua franca for communication in the whole area. However, the fact that the listeners were able to translate at least some non-cognates correctly shows that some of the listeners must have had some exposure since non-cognates are in principle unintelligible if they have not been learned.

The differences in the amount of exposure seem to be an important explanation for differences between the groups of listeners (female and male, Kurmanji and Zazaki). The correlation between functional intelligibility scores and exposure scores is significant at the 0.01 level. In general, the differences between the groups show the same pattern in the intelligibility scores and the exposure scores, with the exception of the Kurmanji men. In this group, the correlation is not significant and the Kurmanji men indicated to have more exposure to the test languages than the other groups even though they were less good at understanding the test language than the Zazaki men. This can be explained by the fact that the Kurmanji listeners regard Zazaki as a Kurdish dialect and therefore assume that they hear it often.

To gain more detailed knowledge about other possible explanations for asymmetric intelligibility we had a closer look at the word pairs that show asymmetric intelligibility. We presented examples of characteristics of individual words that could result in asymmetry between groups of speakers at the word level. These examples illustrate the point that the nature of explanations for asymmetric intelligibility could be both linguistic and extra-linguistic.

Since Zazaki is often regarded as a dialect of Kurdish, it has generally been assumed that Kurmanji as a Kurdish dialect would be understood by Zazaki speakers to a reasonable degree. This is probably the explanation for the fact that Zazaki language has been ignored by language policy makers in Turkey. However, as it is mentioned above, the low intelligibility results between Kurdish and Zazaki strengthen the claim that these two language should be regarded as separate languages.

The ongoing project includes nine other dialects of Kurmanji and Zazaki spoken in Elazığ (see 1.2). At the end of the project, the results are expected to be generalized throughout Turkey, since various dialects of Kurmanji and Zazaki are spoken in the province Elazığ. Within the framework of this project, mutual intelligibility between different dialects of Kurmanji and Zazaki spoken in Elazığ will be tested using the recorded text testing method.

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Appendix A: English translation of the questionnaire

A. Demographic Information

1. Name _____
2. Age _____
3. Gender (1) Woman (2) Man
4. Graduated from _____
5. How many years have you been living in this village? _____
6. Duration, if lived outside the village: _____
7. Which language(s) do you speak? (1) Turkish (2) Kurmanji (3) Zazaki (4) Others
8. Which language do you use in daily life? (1) Turkish (2) Kurmanji (3) Zazaki (4) Others
9. Which language does your father speak? (1) Turkish (2) Kurmanji (3) Zazaki (4) Others
10. Which language does your mother speak? (1) Turkish (2) Kurmanji (3) Zazaki (4) Others

B. The Pattern of Language Use

	I can speak	I can understand
Zazaki		
Kurmanji		

C. Exposure to Test Language

Grade your exposure to Kurmanji/Zazaki between 1 (never) and 5 (almost every day).

Never	1	2	3	4	5	Almost every day
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D. Estimated Intelligibility

Which degree do you think you understand Zazaki/Kurmanji? Please grade between 1 to 5.

I don't understand a word	1	2	3	4	5	I understand perfectly
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E. Attitude Toward the Test Language (After the Listening Test)

How does the language you just heard sound? Please grade between 1 to 5

- | | | | | | | |
|-------------|---|---|---|---|---|---------------|
| a) nice | 1 | 2 | 3 | 4 | 5 | bad |
| b) kind | 1 | 2 | 3 | 4 | 5 | rude |
| c) friendly | 1 | 2 | 3 | 4 | 5 | unfriendly |
| d) normal | 1 | 2 | 3 | 4 | 5 | weird |
| e) modern | 1 | 2 | 3 | 4 | 5 | old-fashioned |

Appendix B: Lists of the Kurmanji and Zazaki words in phonetic transcription included in the functional tests as well as the original Turkish forms and the English translations. For each word is indicated if the corresponding word has a cognate in the language of the listeners as well as the percentages of correct translations for the four groups of listeners

Words	Cognacy	Kurmanji Male (%)	Kurmanji Female (%)	Zazaki Male (%)	Zazaki Female (%)
HORSE <i>Kr. hεsp; Zz. astor</i>	Non-cognate	38.1	15.4	18.2	12.5
SHEEP <i>Kr. mi; Zz. mefna</i>	Cognate	19.0	23.1	27.3	6.3
MOUSE <i>Kr. mijk; Zz. mεrxε</i>	Cognate	23.8	7.7	9.1	0.0
CROW <i>Kr. qirik; Zz. qεlej</i>	Non-cognate	0.0	0.0	0.0	6.3
HAIR <i>Kr. p^hor; Zz. gidzik</i>	Non-cognate	0.0	0.0	40.9	37.5
FINGER <i>Kr. bifji; Zz. gjft</i>	Non-cognate	0.0	0.0	0.0	0.0
BREAKFAST <i>Kr. revija siwe; Zz. ari</i>	Non-cognate	4.8	0.0	0.0	0.0
FARMER <i>Kr. cytkar; Zz. rentfber</i>	Non-cognate	81.0	46.2	0.0	0.0
LIGHT <i>Kr. ro:ni; Zz. tfile</i>	Non-cognate	16.7	7.7	1.1	0.0
WINTER <i>Kr. zivistan; Zz. zimis'ton</i>	Cognate	66.7	76.9	86.4	43.8
WC <i>Kr. kenife; Zz. destoxane</i>	Non-cognate	19.0	30.8	18.2	0.0
VILLAGE <i>Kr. gund; Zz. dew</i>	Non-cognate	14.3	7.7	36.4	14.1

(continued)

Words	Cognacy	Kurmanji Male (%)	Kurmanji Female (%)	Zazaki Male (%)	Zazaki Female (%)
MOUTH Kr. <i>dæv</i> ; Zz. <i>fæk</i>	Non-cognate	28.6	38.5	13.6	0.0
SUN Kr. <i>ro:</i> ; Zz. <i>tindʒ</i>	Non-cognate	0.0	0.0	8.0	4.7
MOON Kr. <i>hiv</i> ; Zz. <i>afm</i>	Cognate	9.5	0.0	0.0	0.0
STAR Kr. <i>istirid</i> ; Zz. <i>asta:rε</i>	Cognate	0.0	7.7	0.0	0.0
MOUNTAIN Kr. <i>tʃija</i> ; Zz. <i>ʔue</i>	Non-cognate	4.8	0.0	0.0	0.0
RAIN Kr. <i>ba:ran</i> ; Zz. <i>va:ru</i>	Cognate	16.7	23.1	47.7	0.0
SNOW Kr. <i>bærf</i> ; Zz. <i>vor</i>	Cognate	14.3	15.4	50.0	12.5
FIELD Kr. <i>zevi</i> ; Zz. <i>hεga</i>	Non-cognate	9.5	7.7	4.6	0.0
CHILD Kr. <i>zari</i> ; Zz. <i>ʔir</i>	Non-cognate	19.0	7.7	15.9	18.8
SHIP Kr. <i>kefti</i> ; Zz. <i>kεfti</i>	Cognate	0.0	0.0	0.0	0.0
FOX Kr. <i>rεvi</i> ; Zz. <i>luw</i>	Cognate	0.0	0.0	4.6	0.0
ANT Kr. <i>gile</i> ; Zz. <i>my dʒle</i>	Non-cognate	0.0	0.0	0.0	0.0
THREE Kr. <i>se</i> ; Zz. <i>hire</i>	Cognate	42.9	0.0	64.8	9.4
COMB Kr. <i>fæh</i> ; Zz. <i>fa:ne</i>	Non-cognate	0.0	7.7	0.0	0.0
APPLE Kr. <i>sev</i> ; Zz. <i>saj</i>	Cognate	4.8	7.7	27.3	6.3
AUTUMN Kr. <i>paiz</i> ; Zz. <i>paiz</i>	Cognate	71.4	92.3	79.6	21.9
TONGUE Kr. <i>ziman</i> ; Zz. <i>zuux</i>	Cognate	9.5	0.0	9.1	0.0
GROOM Kr. <i>zava</i> ; Zz. <i>zuma</i>	Cognate	52.4	69.2	63.6	43.8
BRIDE Kr. <i>buk</i> ; Zz. <i>vejv</i>	Cognate	28.6	42.3	59.1	56.3
HOUSE Kr. <i>mal</i> ; Zz. <i>kije</i>	non-cognate	4.8	15.4	4.6	21.9

(continued)

Words	Cognacy	Kurmanji Male (%)	Kurmanji Female (%)	Zazaki Male (%)	Zazaki Female (%)
BATHROOM <i>Kr. fferx; Zz. serofir</i>	Non-cognate	4.8	0.0	31.8	12.5
RING <i>Kr. hingilis; Zz. giftireh</i>	Non-cognate	4.8	0.0	0.0	0.0
MUSHROOM <i>Kr. gufgarik; Zz. syng</i>	Non-cognate	0.0	0.0	0.0	0.0
GRASS <i>Kr. gija; Zz. vaf</i>	Non-cognate	0.0	0.0	0.0	0.0
PEAR <i>Kr. hermi; Zz. pajze</i>	Non-cognate	0.0	0.0	0.0	0.0
PIGEON <i>Kr. keok; Zz. boran</i>	Non-cognate	0.0	0.0	0.0	0.0
SOCK <i>Kr. kurik; Zz. putf</i>	Non-cognate	4.8	30.8	40.9	50.0
GRANDFATHER <i>Kr. bapir; Zz. pirik</i>	Non-cognate	59.5	69.2	59.1	28.1
CHICKEN <i>Kr. mirifk; Zz. kerg</i>	Non-cognate	9.5	15.4	9.1	1.6
TO SWIM <i>Kr. ajne; Zz. asnaw kerdif</i>	Cognate	0.0	0.0	0.0	0.0
TO DO <i>Kr. kirin; Zz. kerdif</i>	Cognate	4.8	0.0	0.0	0.0
TO TAKE <i>Kr. girtin; Zz. gurotif</i>	Cognate	52.4	15.4	40.9	12.5
TO SLEEP <i>Kr. ra:ketin; Zz. rakotif</i>	Cognate	31.0	15.4	59.1	0.0
TO TALK <i>Kr. qezikirin; Zz. qal kerdif</i>	Non-cognate	29.8	34.6	9.1	0.0
TO RUN <i>Kr. revî; Zz. erjiejif</i>	Non-cognate	0.0	0.0	0.0	0.0
TO COME <i>Kr. ha:tin; Zz. amejiif</i>	Cognate	14.3	8.3	45.5	0.0
TO GIVE <i>Kr. dain Zz. dejif</i>	Cognate	4.8	7.7	81.8	25.0
TO SEE <i>Kr. ditin; Zz. vezijiejif</i>	Cognate	13.1	0.0	22.7	0.0
TO GET OUT <i>Kr. dErkætî; Zz. vedzeyif</i>	Non-cognate	4.8	0.0	4.6	0.0
TO DIE <i>Kr. mirin; Zz. merdif</i>	Cognate	4.8	0.0	95.5	25.0
TO DRINK <i>Kr. vex^varin; Zz. jimîitîf</i>	Non-cognate	4.8	0.0	9.1	9.4

(continued)

Words	Cognacy	Kurmanji Male (%)	Kurmanji Female (%)	Zazaki Male (%)	Zazaki Female (%)
TO GO Kr. <i>fıyjin</i> ; Zz. <i>fıjejif</i>	Cognate	23.8	7.7	45.5	6.3
TO WORK Kr. <i>fuyulin</i> ; Zz. <i>qurê kerdif</i>	Non-cognate	52.4	26.9	56.8	12.5
TO WANT Kr. <i>x^wastin</i> ; Zz. <i>wêstif</i>	Cognate	0.0	0.0	4.6	0.0
TO PASS Kr. <i>derba:zin</i> ; Zz. <i>vijarnejif</i>	Non-cognate	4.8	0.0	0.0	0.0
TO KNOW Kr. <i>zanin</i> ; Zz. <i>zanejif</i>	Cognate	76.2	53.8	100.0	18.8
TO UNDERSTAND Kr. <i>hu kirin</i> ; Zz. <i>fahm kerdif</i>	Non-cognate	52.4	76.9	4.6	0.0
TO CRY Kr. <i>girandin</i> ; Zz. <i>berbijejif</i>	Non-cognate	4.8	7.7	0.0	0.0
TO SAY Kr. <i>gotin</i> ; Zz. <i>vatif</i>	Non-cognate	23.8	11.5	9.1	6.3
TO LOOK Kr. <i>mize kirin</i> ; Zz. <i>ojnejiif</i>	Non-cognate	4.8	0.0	9.1	6.3
TO EAT Kr. <i>x^warin</i> ; Zz. <i>werdif</i>	Cognate	4.8	15.4	31.8	12.5
TO LAUGH Kr. <i>kenin</i> ; Zz. <i>huwejiif</i>	Cognate	0.0	0.0	4.6	0.0
TO LIVE Kr. <i>êjja kirin</i> ; Zz. <i>qani</i>	Non-cognate	2.4	0.0	0.0	0.0
TO TAKE A BATH Kr. <i>fıftin</i> ; Zz. <i>sere fıtiif</i>	Cognate	2.4	19.2	9.1	12.5
TO BRING Kr. <i>hanin</i> ; Zz. <i>ardif</i>	Non-cognate	4.8	0.0	4.6	0.0
TO WRITE Kr. <i>nivistinin</i> ; Zz. <i>nıftif</i>	Cognate	4.8	0.0	0.0	0.0
TO SHOW Kr. <i>rajdin</i> ; Zz. <i>nautif</i>	Non-cognate	0.0	0.0	0.0	0.0
TO SIT Kr. <i>runiştin</i> ; Zz. <i>ronıftif</i>	Cognate	57.1	61.5	100.0	31.3
TO PULL Kr. <i>kıfandin</i> ; Zz. <i>kaf kerdif</i>	Cognate	19.0	23.1	0.0	0.0
TO FALL Kr. <i>ketin</i> ; Zz. <i>erdır</i>	Non-cognate	7.1	5.8	0.0	0.0
TO STOP Kr. <i>sekinin</i> ; Zz. <i>vındirejiif</i>	Non-cognate	9.5	0.0	34.1	0.0

(continued)

Words	Cognacy	Kurmanji Male (%)	Kurmanji Female (%)	Zazaki Male (%)	Zazaki Female (%)
TO ASK Kr. <i>pîrsin</i> ; Zz. <i>pês kerdîf</i>	Cognate	9.5	23.1	31.8	6.3
TO GRAB Kr. <i>pE gîrtin</i> ; Zz. <i>tepiştejîf</i>	Non-cognate	14.3	0.0	0.0	0.0
TO THROW Kr. <i>avîtin</i> ; Zz. <i>Eftîf</i>	Non-cognate	7.1	15.4	0.0	0.0
TO READ Kr. <i>x^wandin</i> ; Zz. <i>wanejîf</i>	Cognate	4.8	0.0	4.6	0.0
TO LOVE Kr. <i>has kirin</i> ; Zz. <i>has kerdîf</i>	Cognate	76.2	100.0	100.0	43.8
TO RECOGNIZE Kr. <i>naskîrin</i> ; Zz. <i>sraşnajîf</i>	Cognate	0.0	0.0	50.0	6.3
TO SMELL Kr. <i>bin qîrin</i> ; Zz. <i>buj kerdîf</i>	Cognate	0.0	0.0	0.0	0.0
TO WAKE UP Kr. <i>xæwe ravun</i> ; Zz. <i>warijîf</i>	Non-cognate	7.1	15.4	4.6	0.0
TO QUIT, TO GIVE UP Kr. <i>berdan</i> ; Zz. <i>veradejîf</i>	Cognate	7.1	0.0	0.0	0.0

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