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A Manual of Linguistic Fieldwork





**Co-funded by
the European Union**

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**Tartu
2021**

Dedicated to the memory of
Alexander E. Kibrik,
my first field linguistics teacher

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Chapter 1. Introduction

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1.1. About this manual

Half a century has passed since the first monographs on field linguistics were published (Samarin 1967, Bouquiaux & Thomas 1971, Kibrik 1972). Now we have dozens of new publications, where experienced researchers describe the methodology of fieldwork. So why do we need this manual as well? The answer to that question is simple. First, in fieldwork, a lot is determined by specific circumstances related to the country and a particular language community. Thus, the experience of working with the Inuit cannot be fully applied to working, let's say, in sub-Saharan Africa and vice versa. This manual is based, first of all, on the author's experience of fieldwork with the Uralic languages, as well as with other languages in Russia (nevertheless, it does not mean that this experience is completely inapplicable to other environments). From this point of view, this manual differs from most books on field linguistics. I do not know of any books on fieldwork in Russia published in English after Kibrik (1977).

Second, it is impossible to describe all situations that may arise in fieldwork. Any field trip is unique and not entirely comparable with previous trips. The experience of each individual researcher is even more unique. The more a researcher is prepared for various situations, the better (s)he is able to react to them, and his/her work is more productive. During fieldwork, a researcher often has only one chance to collect certain data (first of all, this concerns endangered languages – today there is an opportunity to work with a native speaker but tomorrow it will be gone forever). Therefore, the method "I will learn everything from my own mistakes" is unproductive or even counterproductive. It is better to use the experience of previous researchers who have already made various mistakes.

This manual has several goals:

- to give an overview of the methods and approaches in modern field linguistics;
- to discuss the mistakes that field linguists often make, thereby preventing unexperienced field linguists from committing these mistakes in their own fieldwork;
- to describe options that a field linguist has and choices that (s)he should make;
- to suggest some solutions that are not always obvious;
- to instil the idea that despite the numerous existing recommendations and the abundance of the word "should" in this manual, the field linguist must assess the situation himself/herself and approach it creatively, making the optimal decision in every case.

When writing this manual, I relied primarily on three sources of information. The first is my own experience. My acquaintance with field linguistics dates back to the second half of the 1980s and early 1990s, when, as a student, I took part in expeditions organized by Prof. Alexander Kibrik from the Department of Structural and Applied Linguistics (later the Department of Theoretical and Applied Linguistics) of Lomonosov Moscow State University. These were expeditions to Tuva, Abkhazia and Dagestan. In 1992, I went to my first trip to work on a Finno-Ugric language. This was an expedition organized by Vladimir Plungian under the auspices of Moscow State University of Humanities. My skills in working with native speakers also improved while working with speakers of various African languages (first of all Songhai) who studied in Moscow. Since 2000, I switched to working primarily with Finno-Ugric languages. I took part in the expeditions organized by the Department of

Theoretical and Applied Linguistics of Lomonosov Moscow State University (the organizers were Prof. Ariadna I. Kuznetsova, Elena Yu. Kalinina and Svetlana Yu. Toldova) to work on Mari, Komi Zyrian, Besermyan Udmurt, Shoksa Mordvin, and Khanty languages. I also participated in expeditions to other languages of Russia, namely Khakass and Adyghe, under the auspices of Moscow State University of Humanities (organizers: Nina R. Sumbatova, Yakov G. Testelets, Svetlana Yu. Toldova). Since 2001, I started to work with the Votic language. The first expeditions were organized by Tatiana B. Agranat, and later I carried out fieldwork of my own. In 2006, systematic research on Ingrian started as a series of expeditions (2006–2014) organized by Elena Markus and me, and later – when only a few speakers were left – I started going to Ingrian villages alone.

The second source is the experience of my colleagues with whom I discussed fieldwork. This allowed me to appreciate the challenges which field linguists face while working in various parts of the world.

The third source is my project “Documentation of Ingrian: collecting and analyzing fieldwork data and digitizing legacy materials” (2011–2013) financed by the Endangered Languages Documentation Programme¹. In addition to the above-mentioned fieldwork on the Ingrian language, in the course of this project I was a participant of a field linguistics training workshop in London, and later I was one of the lecturers of a similar training workshop in Tomsk (Russia). These workshops helped me to summarize my experience of fieldwork and formulate some recommendations.

In this manual, I deliberately abandoned the idea of using various materials discussed in previous publications on field linguistics. First, these publications are easily available and there is no need to repeat what is written there. Second, I wanted to focus on the experience necessary for a person working with the Uralic languages.

The genre in which this manual is written is best described as a practical guide. I left out almost all theoretical issues related to field linguistics and focused only on practical recommendations. However, before proceeding to these recommendations, I would like to briefly discuss two questions: what is field linguistics and what are its main tasks?

1.2. What is field linguistics?

It is impossible to define when field linguistics methods were used for the first time. Possibly it happened when the sentence “How do you say [...] in your language?” was first uttered. Any research is based on some data, and linguistic research is based on linguistic data. Where can linguistic data be obtained from? There are not many options. The first method is introspection. A linguist can use data from his/her own head. There are evident limitations concerning this method: (a) the data are more reliable and complete if obtained from a native speaker, but very many languages do not have linguists among their native speakers, (b) there is dialectal and idiolectal variation in a language, so data obtained from only one person are not sufficient. The second method is to obtain the data from native speakers. The third method is to get the data from grammars, dictionaries, linguistic corpora, etc. What is the origin of data in these sources? Again, it can either be from a linguist's own head (i.e. introspection with all the aforementioned limitations) or the speech of native speakers. Thus, the base of linguistics as a whole is data obtained from native speakers.

Though the first documented linguistic data appeared simultaneously with the first writing systems, and the first known linguistic work (the grammar by Pāṇini) was created about 2500 years ago, many centuries passed before linguistics was accepted as a separate

¹ Endangered Languages Documentation Programme (<https://www.eldp.net/>) was affiliated with SOAS (University of London) but since July 2021 it is affiliated with Berlin-Brandenburg Academy of Sciences and Humanities (<https://www.bbaw.de/en/>).

academic discipline. In the 19th century, many scholars started to organize expeditions where language was the main object (or one of the main objects) of research. In the middle of the 20th century, people started doing intensive research on “exotic” languages. It became clear that there is an urgent need to summarize and develop field methodology. In the second half of the 20th century, the three abovementioned books (Samarin 1967, Bouquiaux & Thomas 1971, Kibrik 1972) were published. Since that time, field linguistics can be considered as a fully-fledged linguistic discipline.

In general, a branch of an academic discipline can be distinguished on the basis of specific objects of research or specific methods of research. Field linguistics does not have any specific objects of research not covered by other areas of linguistics. The reason why field linguistics became a separate branch is its methodology. Field linguistics is characterized by specific techniques of obtaining linguistic data. However, there is no strict distinction between “field methods” and “non-field methods”. Fieldwork in some distant place with native speakers of some understudied variety is just a prototypical type of fieldwork. To a certain extent, it is just a stereotype used to distinguish “dirty feet linguists” from “armchair linguists” (see Figure 1.1).

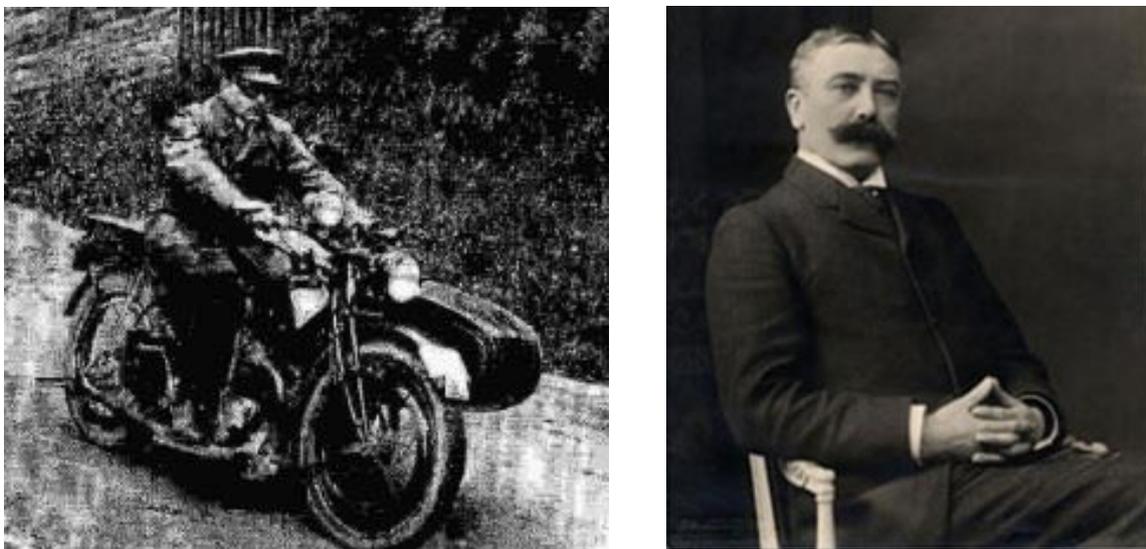


Figure 1.1. Lauri Kettunen and Ferdinand de Saussure

Two criteria can be used to draw a vague distinction between field linguistics and non-field linguistics. The main criterion is the source of data. Field linguistics is about obtaining linguistic data directly from speakers, while non-field linguistics uses other sources, such as grammars, dictionaries, text corpora, etc. The second criterion is already more disputable. It concerns the place where the researcher obtains the data. In prototypical fieldwork, the researcher works with speakers in their community but not in his/her office. However, the methods of obtaining linguistic data do not vary too much with location, even though there are some problems which are specific to work in the field. Besides going to the field, you can invite a native speaker to your location, you can work online, and so on. In the age of globalization, with many speakers of minority languages living in big cities and the means of transport allowing researchers to reach “the field” in one or two days (or in rare cases in a week) as opposed to it taking several months, the difference between “field” and “non-field” becomes blurred.

The problem of drawing this boundary is aggravated by the fact that field linguistics is not an isolated discipline within linguistics. It is connected (and often simply intersects) with a number of other areas, including those that go beyond linguistics in general (see Figure 1.2).

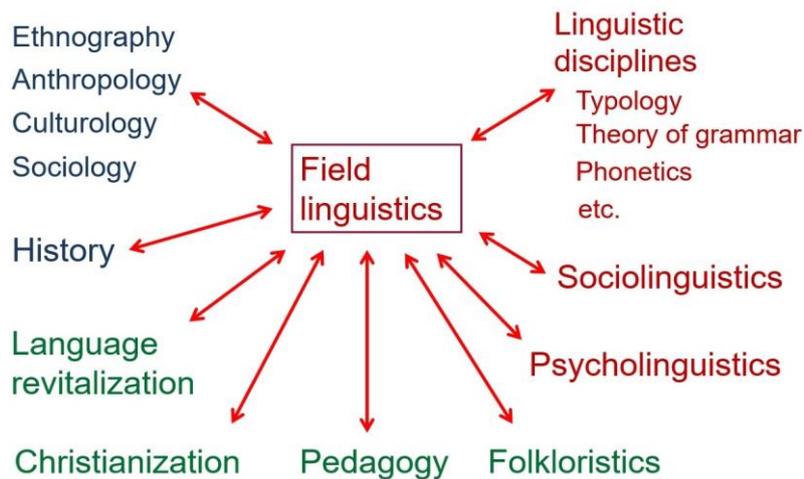


Figure 1.2. Field linguistics and the connected disciplines

First, it is obvious that field linguistics is closely related to other linguistic disciplines such as typology, theory of grammar, experimental phonetics, etc. Field linguistics supplies these disciplines with data, while they improve the methodology for collecting material, set new tasks, and help the linguist to find correct interpretations.

Second, during field research it is impossible to collect exclusively linguistic material. Recordings of stories told by native speakers, video recordings of their life, and so on, constitute valuable material for other humanitarian disciplines: ethnography, cultural studies, anthropology, and sociology. At the same time, the success of linguistic work also largely depends on the competence of the linguist in the related disciplines, because without understanding the culture and society it is impossible to carry out highly professional linguistic work. To take a simple example, while planning fieldwork in a village you should consider the period of the most intensive agricultural works in this area. If the linguist does not know when this period occurs and comes at the same time, (s)he may discover that all potential native speakers have left to work in their fields, and nobody is ready to 'waste' his/her time communicating with the linguist.

Among the humanities, history should be mentioned separately. Linguists' field notes often contain historical material obtained first hand, directly from the participants of events. This kind of primary historical evidence can be very important. For example, while working with Votic and Ingrian native speakers I was able to collect evidence about the deportation of these people to Finland during the Second World War. Against the background of different and often contradictory descriptions of this deportation in various publications, the data obtained from direct witnesses are of undoubted historical value.

A very close interaction exists between field linguistics and sociolinguistics, which studies the relationship between language and extralinguistic (social) factors. Knowing the sociolinguistic information is necessary for the correct interpretation of collected linguistic data. Sociolinguistic information makes up an essential part of the metadata accompanying the recorded data. And it is the field linguist who can collect sociolinguistic data first hand, i.e. in the most reliable form.

Psycholinguistics, which studies how people produce and perceive speech, has many techniques that can be used in the field for researching various languages. A knowledge of these methods may be useful for the field linguist who, in turn, may end up collecting data of great valuable for psycholinguists.

In recent decades, revitalization of languages has become one of the most important tasks that requires the participation of linguists. A core problem of revitalization of minority languages is low language prestige and a lack of teaching materials, such as textbooks,

dictionaries, etc. If such materials are prepared by people without a linguistics background, they may be of rather poor quality, and it makes revitalisation efforts even more complicated. Field linguists, usually working in close cooperation with the local community, can help by preparing teaching materials and thus increasing the language's prestige. In this sphere, field linguistics intersects with pedagogy.

Christianization (which is in fact a social practice rather than an academic discipline) often walked side by side with field linguistics. Christian missionaries were often the first people who collected basic data on many languages in order to communicate with local communities and to translate religious texts into indigenous languages. They also contributed to developing field linguistic methodology and tools. The best-known example is the Summer Institute of Linguistics, a Christian non-profit organization that documents minority languages and is involved in language planning efforts to promote literacy and present the Christian Bible to local communities. Among other activities, SIL published an English translation of Bouquiaux & Thomas (1971) in 1992 (see Bouquiaux & Thomas 1992), developed many pieces of linguistics software, and launched the Ethnologue database on the world's languages (see also Chelliah & de Reuse 2011: 44-45).

And last but not least, the discipline of folkloristics should be mentioned. Folklorists collect a huge amount of linguistic data, and it is also typical that the recordings made by field linguists contain pieces of folklore.

The intensive interaction between field linguistics and other disciplines means that the methodology used in the field can also be implemented in other research areas and vice versa.

1.3. Description and documentation.

The main aim of field linguistics is to collect linguistic data. Linguistic data are required for creating linguistic resources. The most well-known types of linguistic resources are grammars, dictionaries, and text collections. Creating such resources is called description, and field linguistics provides data for this core task of linguistics. However, there are several problematic issues with this type of work.

First, it takes a lot of time to write a grammar or compile a dictionary, and not all linguists can afford to spend several years on such a task. Second, the data in grammars, dictionaries or text collections are processed data. The author of a resource selects the transcription, chooses a set of phenomena to be described, makes certain decisions and leaves aside other possible interpretations, etc. A linguist experienced in typological research knows very well that before you open a grammar you cannot be sure whether this grammar contains a piece of information that you need. In other words, description is always subjective. Third, the standards of language description are changing. For example, if one takes all grammars of the Uralic languages written before the 21st century, (s)he will be surprised to discover that most of them do not contain a chapter on syntax.

All these problems have made linguists realize the great value of primary data. Primary data are unprocessed data that were not influenced by any decisions made by their collector. Primary data are the raw material that is as close to natural speech as possible. Collecting primary data is called documentation. At the end of the 20th century, several publications (Hale et al. 1992, Himmelmann 1998, etc.) pointed to the huge problem of language endangerment and declared documentation as an essential task of field linguistics. These publications gave rise to the documentation movement (see Seifart et al. 2018 about the current state of the art).

There are several reasons why primary data are so invaluable. First, they allow you to check all interpretations and make corrections. If some part of a description refers to primary data that are stored and accessible, it is possible to find and correct misinterpretations and flaws.

Second, they contain phenomena that were left aside (intentionally or accidentally) in the description. How many text corpora encode phrasal intonation? How many grammars contain information about the frequency of forms in speech? How many dictionaries give both the most typical and most atypical contexts for every word? Usually these phenomena – as well as many others, including those we cannot imagine now – are not considered in descriptive resources but can be studied by analysing primary data.

Third, it takes much less time to collect primary data than to create a resource with processed data. The problem is not a linguist’s lack of time, but language endangerment. Languages are dying at a rapid rate. According to the UNESCO Interactive Atlas of the World’s Languages in Danger (<http://www.unesco.org/languages-atlas/index.php>, accessed on 19 of June, 2021) the number of endangered languages is 2205 (not counting more than 200 languages that became extinct after 1850). The distribution of endangered languages by the number of speakers is given in Table 1.1.

Number of speakers	Number of languages
1 – 10	201
11 – 100	324
101 – 1000	574
1001 – 10,000	602
10,001 – 100,000	337
100,001 – 1,000,000	138
> 1,000,001	29
Total:	2205

Table 1.1. The number of endangered languages by the number of speakers

Chart 1.1, taken from UNESCO Interactive Atlas of the World’s Languages in Danger, shows the proportion of endangered languages in relation to all the world’s languages.

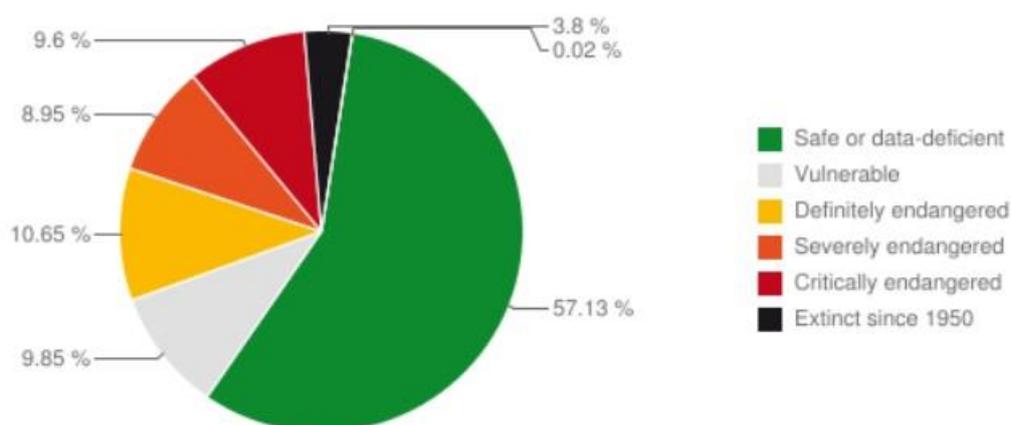


Chart 1.1. Overview of Vitality of the World’s Languages

Even languages that are not endangered develop very quickly (especially where spoken language is concerned, including varieties of online communication) and it is completely impractical to create descriptions for all stages of a language undergoing rapid changes. However, collections of primary data can preserve the material.

Thus, there is no doubt that description without documentation is insufficient. However, raw data without any analysis are not too useful either. If you have many hours of audio recordings of some language but there is no transcription or translation of these recordings and no grammar or dictionary of this language, it will be very problematic for you to use your data.

Documentation is valuable first of all as a source of data for future descriptions and various kinds of research. In a particular situation, the researcher can choose description or documentation as the main focus of fieldwork. However, it is important to think about description when you work on documentation and vice versa. In this way, your work will be the most productive.

Nowadays the requirements that the author of a description must satisfy include: (a) recording and storing the primary data that were used for the description, (b) providing links to the primary data in the description, (c) documenting the decisions made while selecting and interpreting the data. The requirements that a researcher doing language documentation must satisfy include: (a) providing all materials with useful metadata and indices, (b) completing as much preliminary analysis as possible (e.g. transcribing the recordings), (c) making the collected data accessible.

Thus, a contemporary researcher does not have a free choice between doing language description or documentation, but typically (s)he works on both. However, if there is no possibility to carry out systematic multi-year work on a language, as is often the case with highly endangered languages, the researcher should concentrate his/her efforts on documentation and do as much as possible. Concentrating on language description without documenting the language is considered an outdated approach which fails to meet the contemporary standards of field linguistics.

In practical terms, what does it mean for a researcher to work on language documentation?

First, it concerns preparatory works before a field trip. One needs to have all the technical equipment for recording an unlimited amount of language data. One needs to plan how the data will be stored, including the files formats, the naming conventions, etc. (see Section 5).

Second, it should be made clear that all language material has to be recorded, irrespective of whether it is of relevance to the researcher's current investigation. Taking this approach significantly increases the likelihood that future researchers will be able to use the same data to investigate a broad range of other topics. Accurate data management and a clear system for storing metadata provide easy access to the data needed for a concrete research topic.

Third, the contemporary standard of fieldwork expects video documentation. Although recording videos may present some additional difficulties, they can be easily solved (see Section 4).

Fourth, the recorded material should be made accessible to other researchers, which means it should be prepared for depositing in an archive. This does not suppose that everything should immediately become open access; archives typically have flexible rules that allow closing part of the data for a certain period (see Section 5).

It is also worth familiarising oneself with publications on language documentation, among others Lehmann 1999; Gippert, Himmelmann & Mosel 2006; and Grenoble & Furbee 2010.

1.4. Structure of this manual

One can expect that a book on field linguistics begins with the chapter "How to start?". I decided to place this chapter closer to the end of this book as it is more promising to plan a field trip when you already know the potential problems and their solutions. I hope that this approach will significantly reduce the disappointment which can appear when an unprepared researcher starts his/her fieldwork².

² Burling (1984) notes: "... I will assume that you are sufficiently motivated, at the very start of your field trip, to make a substantial investment of time and energy working on a language. Learning a language is by no means a trivial chore. You need to be prepared not only for hard work, but for moments of dreadful discouragement." From my point of view, the dreadful discouragement is not a necessary attribute of fieldwork. If you are aware of

Chapter 2 discusses the core issues of field linguistics: data collection methods and some essential linguistic questions. Chapters 3–5 are dedicated to particular skills that a field linguist should master. They are audio recording, video recording, and managing data and metadata, respectively. Chapter 6 gives a brief overview of useful software for field linguists. A special chapter discusses the issue of ethics. At the end of the book, questions concerning the initial stage of fieldwork and managing a field trip are discussed.

As this manual is based on my own fieldwork experience and the experience of my colleagues, I illustrate many statements and passages with real situations we faced during fieldwork. Descriptions of these situations are marked with additional indentation in the text.

1.5. Acknowledgements

I am extremely grateful to many people whose help made this manual possible. They are:

- all native speakers of different languages with whom I worked;
- my teachers who opened the world of field linguistics to me: [Alexander E. Kibrik], [Sandro V. Kodzasov] and [Ariadna I. Kuznetsova];
- students and colleagues who took part in my expeditions to work with Ingrian – with them I developed and approved my own field methods;
- students who attended my course of lectures on field linguistics – this manual was written as a logical continuation of that course;
- my colleagues with whom I discussed fieldwork methodology and who answered my surveys on this topic, in particular, Naralia Aralova, Olga Fedorova, Valentin Gusev, Sofia Oskolskaya, Nina Sumbatova, Denis Tokmashev, Andrey Shluinsky, Valentine Vydrin, Joshua Wilbur;
- experts who provide training for Endangered Languages Documentation Programme grantees (Peter Austin, Mandana Seyfeddinipur, Sophie Salfner, [Tom Castle], and others);
- Mandana Seyfeddinipur who introduced the world of video recording to me and made many valuable critical comments on this manual;
- Tim Feist for English proof-reading of this manual³;
- Elena Markus with whom I organized Ingrian field trips and who did the preliminary editing of this manual.

potential problems and ways to deal with them, you are prepared.

³ All flaws and inaccuracies in the formulations are entirely my own responsibility.

Chapter 2. Methods of fieldwork

- 2.1. General issues
 - 2.1.1. The intermediary language
 - 2.1.2. Transcription
 - 2.1.3. Language variation
- 2.2. Data collection methods
 - 2.2.1. Recording spontaneous speech
 - 2.2.2. Transcribing speech samples
 - 2.2.3. Recording elicitations
 - 2.2.4. Recording a phonetic questionnaire
 - 2.2.5. Verification of data
 - 2.2.6. Collecting negative data
 - 2.2.7. Collecting lexical data
 - 2.2.8. Conducting experiments
 - 2.2.9. Remote fieldwork
- 2.3. Typology of language consultants
- 2.4. Training language consultants

This chapter discusses the main linguistic activities in the field. At first it considers several general problems (the choice of the intermediary language, the choice of transcription, and language variation) that are important for all data collection methods, and then several specific methods are analysed. Each method has its own challenges and corresponding solutions. The final section of this chapter is dedicated to language consultants and their diversity in the context of fieldwork.

2.1. General issues

2.1.1. The intermediary language

During fieldwork the researcher needs to communicate with native speakers. For this communication (s)he must make a choice: whether (s)he needs an intermediary language and, if so, what this language is. There are four possibilities: (a) no intermediary language is used; (b) an interpreter is required; (c) an intermediary language which is closely related to the language of study is used; (d) an intermediary language which is not closely related to the language of study is employed. Further details on each of these are given below.

(a) No intermediary language is used.

One possibility is for the researcher to communicate with native speakers in their own language (the target language), and there are several positive reasons for making such a choice. First, it is likely that the community will have a more positive attitude towards the researcher. For him/her it will be easier to integrate into the community and to gain access to knowledge that is usually hidden from strangers. Second, speaking the target language facilitates its learning. Third, there is no problem of the intermediary language influencing the speech of the native speaker.

However, there are several negative sides of this approach. First, it takes considerable time to build up the necessary language skills for conducting linguistic research. One possible alternative is for the linguist to live in the community and study the language from the beginning⁴. Of course, this alternative is not compatible with short field trips of several

⁴ Burling (1984: 3) notes: "Communicating dimly through the veil of a poorly known language is both exhausting and frustrating. You have to be prepared to be laughed at, to be treated as an ignorant child. After

weeks, though much depends on a particular researcher – people have different abilities when it comes to language learning. A second alternative is for a researcher to study the language before arriving in the field. It saves time during the field trip but it is rather time consuming in the preparation period. Additionally, for some languages it is almost impossible to find a good teacher or/and teaching materials. Also, the researcher would need to exercise care in the choice of the language variety. For example, if (s)he studies a standard language (or a more prestigious variety) and speaks this variety with the native speakers, it is likely that they will respond using this variety instead of their local one.

Second, some data collection methods are more problematic in the absence of an intermediary language. Just as studying a foreign language would be a real challenge if you only had access to a poor-quality monolingual dictionary, it can likewise be difficult to study the meaning of words, translate narratives, and so on, when conducting monolingual fieldwork.

(b) The researcher and the native speaker do not have an intermediary language for communication, so the researcher communicates with the native speaker through an interpreter.

This method is useful in particular situations, for example, when the researcher is working in the field using some intermediary language and has the opportunity to visit an older speaker who does not know the intermediary language at all. In this case, help from a local who knows both languages and can serve as an interpreter will be useful. This method can also be used at the initial stage of fieldwork when a researcher is beginning to study the target language. And of course, it is particularly suited to a situation where the researcher is not planning a long fieldtrip but just wants to collect basic information (say, as a pilot project or for typological research for which a small piece of data is needed from many different languages). However, it is difficult to implement this method for long-term fieldwork on a single language. First, it would be difficult to establish trustworthy relations with native speakers. Second, there could be problems of translation that make the already challenging process of fieldwork even more complicated.

(c) The researcher uses an intermediary language, which is a close relative of the studied language.

The positive side of this approach is that the researcher has all the advantages of the intermediary language and the translation is often rather simple as it is easy to choose the translation equivalent, the syntactic constructions are often similar, etc.

However, this approach also has a serious drawback, because it is likely that the intermediary language will influence the target language of the native speaker. If two people are speaking two closely related languages with each other, a natural reaction for both of them is to copy expressions, constructions and words that they hear from their interlocutor. As a result, there is quite a big risk that some elements of the intermediary language will colour the native speaker's use of the target language. This is of particular concern when the intermediary language is more prestigious than the target language (which is a more typical situation than vice versa). False friends of a translator are also a problem that should be kept in mind.

Overall then, this approach requires that both the researcher and the native speaker pay careful attention to mitigate these problems.

(d) The researcher uses an intermediary language, which is not a close relative of the studied language.

several months you will probably still wonder if you have been wasting your time by indulging in the fantasy that it is even possible to learn that language.”

The main problem of this approach is that the native speaker may calque constructions and use words from the intermediary language that are absolutely transparent and understandable to him/her but not used in his/her native language. The same problem concerns the situation when the target language has the same construction or word as in the intermediary language but it is peripheral: in this case the main construction or word in the target language may go unnoticed or underexamined. If the intermediary language is more widely spoken and/or more prestigious than the target language (which is often the case), the temptation to use its constructions and words is significantly higher.

It is important to assess the pros and cons of every alternative and choose the most appropriate one. Many researchers combine different alternatives, for example, using the target language in regular communication with the native speaker but an intermediary language in questionnaires prepared for translation into the target language.

2.1.2. Transcription

Once a researcher has recorded some speech the next task is to transcribe it. Languages with a written tradition have a standard orthography, so the researcher has a choice to use or not to use it. There are different factors that influence this decision:

(a) the particular task. It is better not to use the standard orthography if the main object of the research is phonetic variation or something of this kind. However, for a syntactic study, the standard orthography is likely to be fine. In any case, it is important to make an audio recording: a researcher, who later wishes to use this material for some other task, can rely on the primary data and will not need to depend on the orthography.

(b) features of the particular orthography. Every orthography reflects certain features of speech and ignores others. In languages with a long written tradition, the standard orthography often reflects some previous stage of the language and does not correspond to the language used by the contemporary speakers. A recently developed orthography is usually aimed at people who know the language, so many significant phonological differences can be ignored (for example, many tonal languages have a standard orthography which does not mark tones). Thus, the researcher should evaluate whether the existing orthography reflects the features which are important for him/her.

Using the standard orthography is useful if the researcher wants native speakers to be able to easily read the field recordings. Unlike the orthography, a transcription which uses a system unfamiliar to speakers makes reading it more difficult, although often native speakers can study such a transcription without serious difficulties. If the researcher works with an unwritten language, (s)he has no choice but to use a phonetic or phonemic transcription.

The transcription that the researcher uses in the field can differ from the transcription used in future publications. The “field transcription” should be simple enough to allow writing and typing easily. From that point of view, it is better to avoid a transcription with an abundance of small diacritics; such diacritics can be indistinct in fast hand writing, and may be overlooked or confused with each other.

Ideally, the transcription system should represent all phonologically significant oppositions, though if an audio recording is made the violation of this principle is not critical. If the researcher uses a transcription which is not transparent, (s)he should write down the correspondences between this transcription and some well-known standard, e.g. IPA or UPA. It is advisable to avoid using a transcription which looks like a modification of a standard orthography: some native speakers may mistakenly interpret it as incorrect orthography on the part of the researcher and will think that the researcher’s competence in their language is low.

2.1.3. Language variation

Traditional grammars (especially grammars of languages with a literary tradition) are usually very explicit in terms of what exists vs does not exist and what is grammatical vs ungrammatical in the language. As a result, one of the most striking things that an inexperienced researcher often encounters in the field is a high degree of variation between native speakers and even between the answers given by a single speaker.

In 2001, the Department of Theoretical and Applied Linguistics of the Lomonosov Moscow State University organized the second expedition to a Meadow Mari village. After a working session, a young student declared to other participants that he is not satisfied with the native speakers as they gave him different answers to the same question, so apparently they were not sufficiently competent. Some of the more experienced participants reasonably pointed out that it is not always easy to choose the best variant and proposed to determine which of the two possible Russian constructions with the meaning 'in the kitchen' sounds better: *v kuxn'e* [in kitchen.LOC] or *na kuxn'e* [on kitchen.LOC]. After a heated debate, all expedition participants split into two groups of the same size: one group argued for the first variant and the other for the second.

The question of how to deal with variation should be considered at the preparation stage. First, the researcher should understand the sources and, correspondingly, the types of variation. The main factors involved in variation are the following:

1. Dialectal and sub-dialectal differences.

Even in the same village, people may have different origins: some of them may have moved there from other regions, or perhaps their parents migrated there while preserving their original dialectal features which were later adopted by their children.

2. Bilingualism and related phenomena.

Many regions have a mixed population where people speaking different languages live side by side. It is rather typical that in such regions many people speak several languages, so convergence and code switching are very frequent.

Researcher A studied a Finnic language and detected a case marker, which was not described in existing grammars. In her article, she hypothesized the development of a new case. In fact, most speakers of the language of study were bilingual and also spoke the neighbouring language, so code switching was typical in this area. Thus, the researcher simply misinterpreted a case of code switching in her data.

3. Individual characteristics of the speaker (idiolectal variation).

Any speaker has her/his own preferences at all language levels: in pronunciation, in lexical items, in grammatical constructions, in the choice of discourse markers, etc. It is usually impossible to estimate a priori what the differences in the speech of two native speakers from the same settlement are likely to be (even if they are close relatives).

4. The difference between various genres and registers of speech (in particular, spontaneous vs controlled speech).

Speakers tend to use different variants of language in different situations, for example, while speaking with a researcher vs when conversing with a neighbour. Different data collection methods can also give different results and it is typical for some constructions to be detected in spontaneous speech samples but not in the corpus of elicitations, or vice versa (the particular characteristics of data collection methods are considered later in this chapter).

5. Different attitudes to what is correct or incorrect and the degree of purism.

Even speakers of unwritten languages have their own views about a linguistic norm and the purity of the language. These views can vary greatly, and what seems correct and acceptable for one speaker may seem incorrect or unacceptable for another. The features distinguishing native speakers on these grounds are addressed in the last part of this chapter (see Section 2.3). To avoid unbalanced data or/and incorrect conclusions because of the variation, the researcher can do the following:

- a. Accurately collect information on the sociolinguistic background and the linguistic biography of every speaker, as this helps when it comes to defining a dialect or sub-dialect.
- b. Not focus exclusively on the target language but become acquainted with the languages which the target language is in contact with.
- c. Work with different speakers in order to record data from a wider spectrum of idiolects.
- d. Use different methods of collecting linguistic data.
- e. Create questionnaires that allow comparable data to be collected from various speakers.
- f. Detect the tendencies of particular native speakers to be puristic as well as other attitudes concerning the evaluation of linguistic phenomena.

2.2. Data collection methods

2.2.1. Recording spontaneous speech

At first glance, recording spontaneous speech may seem an easy data collection method: just press the button of the recorder and listen to what the native speaker is telling you. In reality, it is one of the most difficult methods, fraught with problems.

First, not many people are able to tell a coherent story to a stranger. Asking someone “please, tell me something” is often met with the reaction “I do not know/remember anything”. It is much more productive to offer a topic to a native speaker. Thus, you should have some topics prepared in advance. Among the standard topics that are usually offered to a speaker are festivities, traditional cuisine, hunting and/or fishing, life in the olden days, etc. I also recommend being very attentive to any information that you hear from native speakers: very often they discuss topics that are interesting for them and you can use the same topic while recording the spontaneous speech from the next native speaker.

Second, much depends on the intermediary language. If you do not speak the target language at all, the whole situation may feel very unnatural for the language speaker: (s)he is being asked to tell a story to a person who does not understand what is being said. It may feel even stranger when the researcher and the native speaker have a common language of communication but the researcher does not want to use it. As a result, the native speaker often switches to this common language, and it is not always easy to get them to switch to the target language. One of the first sentences that the researcher should learn in the target language is “please speak your native language”: it can help get the native speaker to revert to using the target language.

A typical situation is when the native speaker says: “Let me tell you a story in the language that you understand and later I will repeat it in my native language”. You should never agree to such a proposition because it means that you’ll get the whole story in this common language and a two- or three-sentence summary in the target language. The correct reaction of the linguist to this proposition should be: “Tell me first in your native language”. It is likely that in this case you’ll hear the story only in the target language. If it is still repeated in the common language (even partially), it will simplify the process of translating the story.

If the researcher is already fluent in the target language, it is best that (s)he does not speak too much; I have heard recordings which contained mostly the speech of the researcher and not much of the native speaker.

Third, the process of communication typically involves some input on the part of the listener, who may say things such as “yes”, “of course”, and so on, or, even more likely, hum in agreement. These supporting words and sounds often overlap the speech of the consultant and end up creating real problems when it comes to recognising and transcribing the speech. It is very important to learn how to support a speaker without making any sounds: with a head nod, etc. If you still need to provide verbal support, it is better when it is a regular word (not a humming sound) uttered when there is a break in the speech.

From this point of view, it is good for a researcher to know what type of speech (s)he is aiming to record. If (s)he plans to record his/her dialogue with the native speaker, supporting words look natural, but they still should not overlap with the native speaker’s words.

An inexperienced researcher might interrupt the story with his/her questions that do not concern the story itself (e.g. to ask for morphological forms of some word that the native speaker used). It is better to avoid such situations and wait until the speaker comes to the end of the story. After that, you can ask a specifying question: it is very likely that the story will continue.

Fourth, while recording spontaneous speech the researcher has only one attempt: it is not good to stop the speaker and to ask him/her to repeat a sentence, even that this is absolutely normal during elicitation. Of course, the researcher may be able to ask the native speaker to pronounce particular sentences more clearly after the story (usually when transcribing, see Section 2.2.2) but often the researcher does not have the possibility of doing this later.

Fifth, the researcher should eliminate possible noises in advance (see Section 3.3.1). If, while talking, the speaker rustles some paper or someone’s mobile phone starts ringing, the quality of the recording will suffer and parts of the audio may be inaudible.

In general, not everyone can easily produce good samples of spontaneous speech. This is especially the case when it comes to speakers of highly endangered languages who may not have spoken their mother tongue for many years. I have met native speakers who knew their language very well, were good translators, but were not able to tell a story. Some people need some time to prepare the story (to remember the details, to recall words in their memory, etc.).

In my experience, very good stories can be recorded when a native speaker decides to tell a story of his/her own accord rather than as the result of a request from the researcher. If a speaker starts to tell a story using the intermediary language, encourage him/her to tell it in their own language.

While telling a story, the native speaker might mention some private or taboo information. The researcher should not disseminate this information (see Section 7.2). Since it is often not possible to define what information is sensitive for the speaker, it is worth asking him/her explicitly whether (s)he minds if the story is made public.

Recording a dialog between several speakers requires the same methods but the process of transcribing will be more difficult if people speak simultaneously. There are some technical tricks that can help to solve this problem (see Section 3.3.2).

2.2.2. Transcribing speech samples

Successfully recording a spontaneous speech sample is just the first step in documenting and/or describing the language. The next step is transcribing and translating this sample. This data collection method is sometimes one of the easiest genres, while at other times it may be the hardest genre.

Usually, a researcher will work alongside a native speaker. The native speaker will listen to the recording and then (a) repeat it carefully and clearly to the linguist, who transcribes it, and (b) translates it. There are two situations where this process may differ. If a native speaker can write in his/her native language and is trained to do transcriptions, (s)he can do this work

without a linguist. In fact, training native speakers to do such work is a very productive approach. Unfortunately, there are many cases when this is not an option. The second situation is when a linguist is already fluent in the target language and can do this work without the assistance of a native speaker. In this case it is still worth checking the transcription and translation with a native speaker: even a good knowledge of a language does not mean that you will never interpret something wrongly. In any case, native speakers understand the context much better than a linguist. I was really impressed when I was transcribing spontaneous texts with Ingrian native speakers and several times the speaker who helped me predicted the next sentence in the recording: “Ah, now she will tell that ...”. And really the next sentence was exactly or very similar to what was expected. Additionally, there are always many background facts that are known to the members of the language community but are not known to a stranger. The same concerns phraseology. However, when you deal with an endangered language, one day you may find yourself in a situation where there are no speakers left who can help you in transcribing, so you can only rely on your own knowledge and on the previously collected materials.

The regular process of transcribing involving a linguist and a native speaker is rather easy when the language is alive and the speakers are relatively young. Even speakers who have lost the ability to speak fluently but preserved a complete passive knowledge of the language can easily do such work. Their task is just to repeat the speech sentence by sentence and to translate it.

The situation is completely different if it concerns an almost extinct language with only elderly speakers left. First, many elderly people have a hearing impairment. Second, and maybe the worst problem, is that for an aged person it is psychologically difficult to accurately repeat a sentence (this statement comes from my own observations: I do not know how universal this problem is, and it is possible there are some culture-specific factors involved that I do not know about). Very often the native speaker uses some other wording or tries to make a sentence better or remove some insignificant parts but does not repeat the sentence exactly as it is in the recording. This happens both when (s)he works with his/her own recording (“What did I say? Forget it! There is no use translating this phrase! Better write in this way...”) or with a recording of another person (“What did she say? It is not correct! It is better to say...”). In such cases, the work becomes very exhausting for both the native speaker and the linguist, and transcribing even one minute of your sample within one hour feels like a good result.

There are a number of factors to consider when transcribing the recorded speech, including: (1) the device used to play the recording to the native speaker; (2) whether to use headphones or speakers; (3) what transcription software to use; and (4) whether or not to record transcription sessions. I will discuss each of these considerations in turn.

First, the researcher needs a device to play the recording to the native speaker. Since usually every section of the recording is played more than once (since it is impossible to make a correct transcription after listening only once), neither standard sound players nor standard audio software on a computer are convenient. It is best to use a computer programme which displays the sound wave: it helps you to find the required piece of the recording and to replay it. I do not think that software designed for phonetic analysis is a good tool for this work, since its interface is aimed at other tasks. However, a piece of software used for basic operations with audio files is very useful, as it allows you to see the sound wave and replay any selected piece of it (see Section 6.2). Working with Sound Forge Audio Studio I usually do some preparatory work before visiting a native speaker: I listen to the recording that I plan to transcribe and insert markers splitting the whole recording into short intervals. Every interval should be short enough to be remembered and translated by the native speaker. Normally such intervals correspond to clauses: short sentences or structural parts of sentences.

Transcribing video recordings has both positive and negative sides. The positive side is that it is easier to transcribe it and the transcription will be more accurate (see Section 4.1.1). However, it requires software which can play a video and show you the sound wave simultaneously. ELAN, a linguistic annotation tool, is a well-known example of such software (see Section 6.5.1). While transcribing a video, the researcher and the native speaker sit side by side so they can both see the screen.

Second, there are two options as to how a native speaker will listen to the recording: through headphones or through speakers. Good headphones are usually better than speakers for the recognition of speech, but in this case a headphone splitter (y-splitter) is needed to plug in two pairs of headphones. However, headphones can be uncomfortable for older native speakers and in this case it is preferable to use speakers. If using the computer's internal speakers, you should check that they are good enough to produce a clear sound and not to distort the sound of speech when playing loudly. Speakers with a power supply from the USB port of the computer may be a good option in places where a socket near the table is not guaranteed.

Third, there are several possibilities when it comes to the transcription and translation. This can be done in special program for transcribing, which can also play the recording (see Sections 6.5.4 and 6.5.5). Some researchers use ELAN (see Section 6.5.1) both for playing a recording and transcribing it. ELAN has a special Transcription Mode for this kind of work. You can also use separate pieces of software for playing the recording and doing the transcription and translation. The latter can be done in a text editor but, in this case, there is no synchronization with the audio and it is more difficult to find the place in a recording which corresponds to a given transcription. If taking this approach, it is worth indicating in the text file the start and end times in the recording for each transcription. Finally, some researchers prefer to do transcriptions using pen and paper.

Transcription and translation work can be quite time-consuming so when your time with the native speaker is limited, it is best to optimize this process. If a researcher already has some knowledge of the target language, one possible solution is for him/her to prepare a draft transcription and translation before the visit to the native speaker. Then, during the session (s)he just checks, corrects and updates the prepared draft.

Fourth, transcribing and translating is often considered as an auxiliary work, resulting in a text ready for archiving or publication, and so it is usually felt that there is no need to record these sessions. I strongly recommend recording such sessions as well, because it allows you to go back later and correct your typos or check the most problematic moments in the transcription and translation. Very often the native speaker makes additional comments that can be useful to revisit.

It is a rare situation when an accurate translation and transcription can be completed in one go. After the first draft of transcription and translation is ready, the researcher should carefully listen to the recording and it is very likely that (s)he will find some occasions where the transcription does not completely conform to the sound and/or there are some gaps in the translation. Some of these problems can be solved by the researcher, but others will require further consultation with a native speaker.

A very important question concerning this data collection method is the choice of a native speaker. It can be either the same speaker whose recording is now transcribed or some other speaker. Working with the same speaker obviously has some positive sides: (s)he definitely knows all the words in the narrative⁵, a misinterpretation is unlikely, the context is clear, etc. However, it is not always possible, because sometimes the speaker is not available for some reason. It is also common for a speaker to be good at telling stories but not good at

⁵ However, sometimes it so happens that a native speaker cannot understand what he/she has said. I do not know whether this is just a problem of indistinct pronunciation or some other problem.

transcribing and translation and this is particularly so with older people with hearing impairments. In this case, a different speaker should be hired for this work. It is important that the native speaker chosen for transcribing and translation meets the following requirements.

First, (s)he should speak the same variety. This is a question of both linguistics and ethics. The linguistic point is self-evident: the speaker should not substitute either pronunciation or forms in the recording with variants typical for his/her own dialect. The ethical point is more complicated as it depends on the person's attitude to the linguistic norm.

In 2003, an expedition to the Adyghe village of Khakurinokhabl' was organized by the Russian State University for the Humanities. It was expected that the inhabitants of this village speak the Abzakh dialect of Adyghe. However, most of the language consultants were women who worked as teachers in the local school. The sociolinguistic data were collected rather slowly so only in the middle of the expedition did it become clear that all but one of the language consultants were not local – they had come to this village from other regions of the Adyghe Republic because of marriage. On one occasion, a story was recorded from with the one local woman and later a different consultant helped to transcribe and translate it. This consultant told her colleagues about her experience and they criticized the local consultant because she spoke the local dialect and not the standard Adyghe language. They made her cry and she was really depressed after this situation.

Second, the researcher should be sure that the native speaker who was recorded and the native speaker who helps in transcribing and translating are on good terms so as to avoid any sort of conflict. The most appropriate way is to ask the first speaker explicitly whether it is OK if the second person helps to transcribe the story.

Third, the researcher should explain the essence of this work to the native speaker who helps with transcribing. It is necessary to highlight the importance of repeating the recorded speech exactly as it was said in the recording but not as they think it should be.

2.2.3. Recording elicitations

At first glance, this method looks simple and transparent: the researcher offers some words or sentences for translation to the native speaker, and the native speaker translates them into his/her native language⁶. However, there are several conceptual problems that should be kept in mind. The main problem is that there can be various translations based on different principles. The most basic opposition is literal translation vs meaningful culture-specific translation. The literal translation often copies some features of the intermediary language. However, the researcher may have different goals and without knowing the particular goal it is impossible to say which type of translation (s)he needs.

Let's consider the following example. In Ingrian (as well as in most Finnic languages), the verbs 'to leave' and 'to stay' require the illative object denoting localization (i.e. you leave your phone **into** the office and not **in** the office). In Russian, such an object is encoded with a prepositional construction answering the question "where" (which corresponds to the Ingrian inessive case), but not "where to". In my Ingrian spontaneous speech corpus, the object of these verbs was always marked with the illative case. However, when a Russian sentence with these verbs was offered for translation, some native speakers made a literal translation and translated it with the inessive case. Now imagine that a researcher, who is not experienced in

⁶ Translating of words or sentences into the target language is the most typical elicitation technique, but there are, in fact, many other techniques, too (see Bowern 2008: 77–84).

the language, does not know about this phenomenon and offers a Russian sentence with the verb ‘to leave’ in order to elicit the inessive form. The native speaker does not know his/her goals. If the native speaker translates this sentence accurately, the researcher does not receive the required form. If the native speaker translates this literally, the researcher gets the required form and his/her goal is achieved, albeit through a clause which may in fact be ungrammatical. However, if the researcher has some different goal (e.g. (s)he wants to get an illustrative example with the verb ‘to leave’ for a grammar), the same translations give quite the opposite results: the literal translation is not appropriate because it does not reflect how native speakers would say this, while the accurate translation with the illative achieves the researcher's goal.

What can the researcher do to avoid mistakes and to get the desired result? First of all, the researcher should understand that there are different types of translations and it is important not to confuse them. There is an opinion that I’ve heard from some of my colleagues that “a native speaker is always right”, and every piece of data recorded from a native speaker can be presented in a publication. I am sure that this is a completely wrong attitude, because it is the task of a researcher to distinguish between different types of linguistic data in the same way (s)he treats his own speech: a translation may be literal or dynamic, it may contain simplifications and colloquial ellipses or be an accurately constructed and distinctly pronounced sentence, it may contain peripheral and rarely used words and constructions or only the most widespread forms, and finally there may be slips of the tongue, paradigmatic levelling, and many other types of “mistakes”.

The main problem of the elicitation method is a temptation to create an artificial language that is clear for a researcher but is far removed from natural speech. Elicitations allow researchers to detect specific grammatical constructions and restrictions, but these constructions should be confirmed by examples from spontaneous speech samples. All constructions should be carefully re-checked. If the researcher cannot find a corresponding example in spontaneous speech, it is important to define the reason. It may simply be because the phenomenon is rare. It may also be the case that this construction is not actively used (i.e. it does not appear in spontaneous speech) but it is understandable and may appear in controlled speech in a specially construed context.

There is also an opinion that it is better to use only spontaneous speech samples and that elicited data are not reliable, but this is not true⁷. This problem has been discussed in many publications and so I do not intend to discuss it again, but it will suffice to quote one passage: *“I have argued that for the purpose of collecting useful information about meaning, direct elicitation is an indispensable technique. Evidence that pure text-collection or the collection of only naturally occurring data is insufficient was provided, along with a detailed set of guidelines for conducting semantic fieldwork.”* (Matthewson 2004).

Nevertheless, I argue that the researcher should try to make the contexts for translations maximally natural. Doing so will help ensure the native speaker uses words, forms and constructions which are usual. Unnatural contexts can affect the translation in various ways, and the main goal of the translation task may remain unachieved, meaning the quality of the received data might be questionable. Furthermore, unnatural contexts may irritate native speakers and provoke a negative attitude towards the fieldwork process.

Researcher N. studied nominal forms in a minor Finnic language and used the same context for eliciting the same morphological case from most nouns. This context was a postpositional construction “A fly is flying above X”. The postposition with the meaning ‘above’ requires the genitive form of a noun and –

⁷ Mithun (2001: 35–36) notes: “It is well known that the use of just one of the basic methods of collecting language data (recording spontaneous speech, or translating sentences from an intermediary language) is not sufficient and result in a one-sided presentation of language data”.

since a fly can basically fly above any material object – this context is rather universal, so the required forms were indeed elicited. However, on one occasion a native speaker – an old woman – gave some feedback on this method of working. She said: “Please do not be angry at me, I am speaking frankly. I would not write down all this fucking bullshit. I would write down everything taken from real life. And all these flies, what are they good for?”

One of the conceptual problems concerning fieldwork in general and primarily the elicitation technique is the influence of the fieldwork on the language of consultants. A typical situation is when the researcher wants to get a particular form or construction, so (s)he does not accept a translation by the native speaker and asks him/her to make a translation that satisfies the goal of the research. Soon enough, the native speaker realizes what they are required to say and later can use this form or construction even if the topic of the research is completely different.

Researcher T. was interested in several words with the meaning ‘house’ in a Finnic language. After a while, her main language consultant began offering three variants of the word ‘house’ in all sentences containing this word irrespective the researcher she worked with and the subject of research.

For this reason, it is not good when the speaker “calculates” what is interesting for the researcher and tries to adapt his/her speech to the researcher’s needs. From the point of view of the researcher, there are two optimal strategies: either (s)he explains the task to the native speaker and explains that this task concerns only the current session so the required translation is not “universal”, or (s)he makes the goal of the research covert so that the native speaker cannot guess it.

It should be noted that translation of sentences and forms can be very exhausting for a native speaker. Unlike the researcher who understands the logic of a questionnaire and often gets some intriguing results, the native speaker does not have such a motivation. Additionally, most researchers have not worked as language consultants themselves and cannot understand how difficult it can be to provide an accurate translation of sentences or forms into their native language. If the researcher does not monitor the stamina of the native speaker, one of the possible reactions is that the native speaker starts to say anything that comes into his/her head just to finish the session as soon as possible. Data obtained in a situation like this are of very little value and may even be detrimental because they can be mistakenly taken for valid data on the language when in fact they are not.

In spite of all the potential problems, elicitation (together with the analysis of spontaneous speech) is the main method of obtaining linguistic data. It has several important advantages.

First, you can get forms and constructions which are rare. The distribution of forms and constructions in speech is extremely uneven. I once did a simple experiment: I took several Russian nouns belonging to the everyday lexicon and checked how many of their different case forms can be found in the Russian National Corpus. The result was striking: for many of the forms I checked there were less than ten occurrences in the corpus and some of them were not found at all (for example, the dative plural of *sv’okla* ‘beetroot’ was absent). If we encounter this situation in a corpus containing about 1 billion wordforms, what can we estimate in the corpora of minor languages, which have several million wordforms at the most, and more often have just several thousand wordforms? Thus, elicitation is often the only way to obtain the whole paradigms of words, many syntactic constructions, and so on.

Second, elicitation can make the data more reliable as the researcher can obtain comparable data from different speakers, e.g. by giving them the same form or construction for translation. It is also possible to test the same or similar constructions with the same native speaker: it is common for a speaker to make slips of the tongue, or to struggle with a translation initially but then find it much easier on another occasion.

Third, elicitation allows one to collect “concentrated” data on a particular topic. For example, a single session working through a questionnaire targeting a specific topic might result in more of the required data being recorded than would be possible during dozens of narratives.

Forth, the controlled speech in elicitations is usually much more distinctive than spontaneous speech. Very many phonetic and morphophonological phenomena (e.g. reduction) can be carefully studied only if the researcher is able to compare spontaneous speech to intentionally distinct pronunciations.

Though the debates on the topic “what is more important: spontaneous or controlled speech?” have lasted for many years, most field linguists agree that both techniques are extremely important and should not be ignored.

The following recommendations can be given to a researcher collecting data through direct elicitation:

- try to use natural sentences for translation;
- do not interrupt the native speaker, give him/her a chance to finish the translation (even if you see that the translation will not contain the required data);
- do not make noise by typing or writing while the speaker is talking;
- try to understand the whole elicited phrase (not only the required form or construction) and if you do not manage to understand it ask the native speaker to repeat it more distinctively;
- do not forget that your data might be valuable for a wide set of topics besides the main focus of your research.

2.2.4. Recording a phonetic questionnaire

While preparing a language description or elaborating a transcription, the researcher has to make some decisions concerning the phonetics and phonology. Such decisions are often based on a thorough phonetic analysis. Linguists whose research has not previously focused on phonetics may not always realize that phonetic analysis requires special methods of collecting the data: many phonetics features and phonological oppositions are neutralized in fluent speech but are clearly seen in controlled speech and sometimes only in particular contexts.

Researcher G. published an article where he analysed a spontaneous speech sample of a Finnic variety and concluded that a certain durational contrast of consonants discussed in the literature had been lost. A later study of the same variety by another researcher based on a specially designed phonetic questionnaire showed that this contrast does in fact still exist.

The main method of collecting phonetic data is preparing and recording a phonetic questionnaire. Though this data collection method partially coincides with the previous one, there are several differences.

The main two stages of collecting phonetic data are (1) elaborating a phonetic questionnaire, (2) recording this phonetic questionnaire. While elaborating a phonetic questionnaire it is important to have in mind the following:

(a) Very often recording of separate words is not the best solution. First, it is more natural to put wordforms into sentences. Second, some contrasts may be observed only in specific contexts. Third, the pronunciation of a wordform often depends on its position in the sentence, on the logical stress, etc.

In 1988, I made my first recording of a Songhay speaker. I recorded a list of nouns; every noun was pronounced in two forms, the definite singular and the indefinite singular. For some nouns, these two forms sounded the same. Only later did I learn that the difference between definite and indefinite singular forms is often manifested by the length of the final vowel and that this durational contrast becomes apparent only in specific phonetic contexts but never in isolated pronunciations.

For these reasons, it is better to record token words in context (frame sentences). It is important to define the parameters that can influence the pronunciation of tokens. Then you can fix some parameters (e.g. you can record all tokens in the same phrase position) and vary other parameters (e.g. to record one group of tokens on which the phrasal prominence falls and another group of tokens on which the phrasal prominence does not fall).

It is important to remember that some positions are more distinctive than others and that this depends on various factors, e.g. in some languages the final word may be pronounced louder than other words but in other languages the opposite is true.

One of the typical frame sentences is "I said XXX, not YYY". In this case, the token word XXX is usually pronounced rather distinctively and without any unwanted effects like final lengthening, etc.

(b) There are two main methods of recording a phonetic questionnaire. A native speaker can read a questionnaire written in the target language or translate sentences from the intermediary language to the target language. If you are working on an unwritten language, this is usually not an option. However, sometimes people who are literate in some other language can easily read a transcribed text in their native unwritten language. The researcher should decide in advance what mode of recording – reading or translating – (s)he is going to use. If you choose the translating mode, it is very important to make frame sentences simple: the native speaker should not have difficulties in translating, which may lead to him/her pausing and having no fixed speech tempo, rendering the results invalid.

(c) Most phonetic tasks require recorded data to be segmented. Because of sandhi, it can be difficult to define the boundary between two words (for example, the final vowel of a preceding word can merge with the initial vowel of the following word). For this reason, it is important to select the words surrounding the token very carefully. It is usually easy to define the boundaries of a token word when the preceding word ends, and the following word begins, with either a sibilant or a voiceless plosive. However, this does not apply if the token word begins or ends with a similar sound, and two voiceless plosives or two sibilants end up adjacent to each other. A similar problem concerns segmentation within token words. If there are many problems in defining the boundaries between segments, it will affect the results of the research. My experience suggests that it is possible to create a hierarchy of consonants with regard to how easy it is to define the boundaries in the sequence "vowel + consonant". This hierarchy is presented in Table 2.1.

Segmentation	Consonant	Comments
Very easy	s, š, z, ž	
Easy	p, t, k	In the sequence “consonant + vowel”, it is very easy to define the boundary with a voiceless stop but in the sequence “vowel + consonant” a fading vowel can slightly blur the boundary between these segments
Relatively easy	h, f	
Satisfactory	b, d, g, m, n, v	For nasals, much depends on a particular vowel. It is rather difficult to draw a margin between a nasal and [u] or [i]. With other vowels it can be easy.
Difficult	l, r	

Table 2.1. The hierarchy of consonants with regard to ease of segmentation in the “vowel + consonant” sequence

In a sequence of two consonants, it is easy to draw a margin when the consonants are of different types (e.g. [sm], [tl], [fr]), but sequences such as [ln], [vl], [mn], etc. can be problematic.

(c) The researcher should not overlook the meaning of the sentences in the questionnaire. The sentences should not sound absurd or strange, otherwise a native speaker is likely to pause, speak uncertainly with a quiet or broken voice, etc. The meaning should not be insulting for the native speakers. It is better to avoid such sentences as *My daughter became ill, My money was stolen, I want to kill this man, My neighbour’s house was burnt down*. If there is no possibility of replacing such sentences, the context may be modified, so for example: *A bad guy says “I want to kill this man”, It is not true that my neighbour’s house was burnt down, Why does he think that my money was stolen?, etc.*

My colleagues created a phonetic questionnaire for recording with Ingrian speakers. All speakers were very elderly, and many had hearing impairments. When I looked at the questionnaire I noticed that the last sentences in the questionnaire were the following: ‘He can hear badly, he does not want to hear anything. He does not want to hear anything, he can hear badly. The old dog will die soon, it is time to die. It is time to die, the old dog will die soon’. I pointed out that these questions were highly inappropriate and asked for them to be either replaced, separated and put in the middle of the questionnaire.

(d) Before the recording, the questionnaire should be tested. The researcher should choose one or two native speakers, and ask him/her to read or to translate the prepared sentences. It is important to check that all words are well-known, understandable and easy to read. In the case of translation, it is best to avoid the possibility of alternative translations being given – words for which no obvious synonyms exist should be chosen.

The next step is recording of the prepared questionnaire.

(a) It is important to explain to the native speaker the essence of this work and to give the necessary instructions. In particular, it can be useful to stipulate the speech tempo (usually clearly-enunciated speech at a regular tempo is required: not too fast but not dictating syllable by syllable either).

(b) All necessary preparations concerning the elimination of noises and choosing the best place for equipment are described in Sections 3.3. and 3.4.

(c) The questionnaire should not be too long. Much depends on a particular speaker but usually 40–50 minutes of recording is the maximum for a phonetic questionnaire. If it is not possible to postpone the recording of the next portion of data until another session, an appropriate break should be taken. If the researcher sees that the native speaker is tired, it is better to stop the recording, because continuing under these conditions will mean the collected data are unreliable.

(d) A well-known issue concerns the number of times a speaker should repeat each utterance. Some researchers think that an utterance should be pronounced several times. Some researchers later select only one from several recorded utterances. Though repetition allows getting more recorded tokens, it is not always a good method. Many native speakers change the speech tempo when repeating words or sentences, especially if there is more than one repetition. They start to speak faster or slow down and start dictating. To avoid this effect, I recommend altering the frame sentence slightly so that it does not influence the token word. For example, if you want to get a form of the word *boy* in the sentence *He saw this boy in the shop*, you can also use sentences *My brother saw this boy in the shop*, *Yesterday he saw this boy in the shop*, *I know that he saw this boy in the shop*, etc.

2.2.5. Verification of data

As already mentioned in Section 2.2.3, one of the possible mistakes is to think that all your data have the same validity. There are lots of reasons why the recorded data may be unreliable, for example:

- the researcher did not formulate the task well enough;
- the native speaker misheard or misinterpreted the task;
- the researcher did not monitor the condition of the native speaker (e.g. the speaker was already tired);
- (and many other reasons not listed here).

The only way to significantly increase the reliability of data is to check everything carefully. There are various methods of checking the data.

The most obvious method is to ask the same question again. This can be done in different ways. First, you can just ask a speaker to repeat a word or a sentence. This can be useful for getting a correct transcription: often when repeating a sentence the native speaker will pronounce it more distinctively without reducing or dropping sounds. Sometimes the native speaker chooses a better variant of a construction instead of what was said in the first attempt. Second, the same question can be asked later. It is often the case that the answer or the translation will be different, and this is a sign to the researcher that (s)he should check the reason for such variation. I often noticed that native speakers of highly endangered languages that do not use their language for everyday communication demonstrate significant variation in building the paradigms of words: they may forget some irregular form and remember it in the next fieldwork session. Third, it is very important to ask the same questions from other native speakers. It is important to reveal dialectal and idiolectal features. If you are working with only one native speaker, you cannot be sure whether some feature is typical for the whole variety or just for one person. As discussed in Section 2.3, different speakers may have different views regarding what is correct or incorrect.

There are two possible ways of repeating the question: to ask exactly the same question or to modify it slightly. If the question is the same as before the native speaker might ask the researcher: “Why do you ask the same question again?” For this reason, it is sometimes better to modify a question. However, one needs to be careful not to change any features that might affect the answer.

Another method of verifying the data is by reverse translation. Under this method, the researcher offers a sentence in the target language which the speaker, on a previous occasion, translated from the intermediary language, and asks the native speaker to translate it back into the intermediary language. Any differences between the original stimulus and the result of the reverse translation are worth further investigation.

Data obtained as spontaneous speech samples can also be verified. It is not possible to ask the native speaker to repeat the whole story but the most problematic moments can be checked. For example, the researcher can translate the story into the intermediary language, then ask the native speaker to translate specific sentences from the translation into the target language. Once this task is complete, the researcher can analyse any differences between the spontaneous speech and the translated version.

While verifying the data it is good to keep in mind that there is usually a difference between what a speaker evaluates as correct or grammatical and what (s)he really uses in speech. Much depends on a particular genre: for example, often native speakers prepare translations during the elicitation session more thoroughly and do not use words or constructions that may be found in their spontaneous speech. On the other hand, calques are more probable in elicited data.

2.2.6. Collecting negative data

A very important subtype of linguistic fieldwork is obtaining negative data. This data collection method falls somewhere between verification and elicitation: unlike the standard verification, it is used for getting new information, but unlike elicitation, it does not involve translation. While most elicited data are collected by asking the question “How does you say x in your language?”, negative data contains information on what cannot be said.

When applying this method, the researcher should check that the native speaker understands the question correctly. First, it is possible that the researcher mispronounces a sentence in the target language and the native speaker is unable to identify some forms. Second, the native speaker may assess something as incorrect even when the researcher is hoping to verify some other aspect of the language. For example, the researcher might ask “Is this a correct sentence?” thinking about a particular syntactic construction, but the native speaker answers “No” because the researcher used an incorrect word, or pronounced something incorrectly, or because the sense of the sentence is not correct from a pragmatic point of view. Thus, the researcher should be very accurate in using the notion of “correctness” and monitor whether the native speaker has the same understanding of it.

In an expedition to one of the Caucasian languages (unfortunately I do not remember which language), one student had a hypothesis that he wanted to check with a native speaker.

- Is it possible to say it like this? – asked the student.
- Yes, it is possible – said the native speaker.

The student changed the construction and asked again:

- And is it possible to say it like this? – asked the student.
- Yes, it is also possible – said the native speaker.

After several changes and the native speaker's invariably positive answer, the student felt that something was going wrong.

- And what does it mean? – he asked about the last confirmed sentence.
- It means nothing! – answered the native speaker.

2.2.7. Collecting lexical data

Collecting data for a dictionary can be considered as a subtype of the elicitation technique. However, beyond its most basic form (i.e. collecting wordlists in order to get acquainted with the studied language), it is a rather complicated task that needs many conceptual solutions. I will not discuss here all issues involved with lexicography as it would require at least a separate volume, but I will nevertheless give a short overview of the main questions that a researcher should have in mind while collecting lexical data.

First of all, the researcher should understand clearly what his/her aim is. If (s)he plans to compile a dictionary (even for his/her own needs), it is important to decide what type of dictionary it is and what kind of information will be presented there.

The problem of transcription was discussed at the beginning of this chapter so now I leave it aside. An essential question concerns grammar: which forms of a lexeme should be collected and which one of them is the main form. A good dictionary should contain basic grammatical information that helps to build a paradigm of every inflected word. There is a wide spectrum of approaches to this problem. Some dictionaries give many forms of lexemes while others give only one form plus a paradigmatic index, which is a key for building the paradigms. A combination of the two is also possible, where a dictionary offers several basic forms and a paradigmatic index.

In the beginning, it is often difficult to define which forms you need. It becomes clearer when the morphology of the language has been studied well enough, and there are no gaps in the inflection system yet to be understood. It is better, therefore, to collect multiple forms: collecting the data form by form (e.g. the nominative form of all lexemes, then the genitive form of all lexemes, and so on.) is usually more tiresome than collecting data word by word (i.e. the required set of forms from one lexeme, then from the other, and so on). The former situation often occurs when the researcher realises that some important form was missed from the list of required forms. Additionally, if a language has a complicated inflectional system it is possible that native speakers make mistakes and so it is better to collect forms that can substitute each other as evidence of a paradigmatic type.

It is possible to collect wordforms as separate words or as elements of sentences. If a language is in vigorous use, a native speaker who is educated or quick-witted can easily inflect a noun or a verb, but this is unlikely to be possible if working on a moribund unwritten language. In the latter case, you should prepare sentences containing the required form for translation, but bear in mind that the whole process will take significantly longer (see Section 2.2.3, where realistic contexts and related problems are discussed). Much depends on the purpose of the collected data: for example, in audio samples, inflectional forms are more natural in context than in isolation. At the same time, a form in a sentence is often subject to sandhi or other phonetic processes at the word boundaries, and so the researcher should decide if it suits the task.

The choice of the main dictionary form is also an important question. The main requirements of this form are the following:

- it should exist for all words of a particular class;
- it should be easy to obtain through translation;
- ideally it should be possible for many other inflectional forms to be easily built from the main form,
- ideally it should not contradict the lexicographic tradition of the language.

In a particular situation, these principles may contradict each other.

In most cases, the main form will be the nominative singular for nouns and the infinitive for verbs, but there are languages that have different options. For example, there are several infinitive-like forms in Finnic languages, and the Estonian tradition prefers to use the *ma*-form as the main one, while in the Finnish tradition the *da*-form (the first infinitive) is preferred.

Languages which are predominantly prefixing in their inflection can pose a real problem for lexicographers when it comes to deciding on the main (or citation) form to be used. For example, in the Abkhaz language, a nominal form usually starts with a possessive prefix (its neutral variant is sometimes called an article), and including this prefix as part of the citation form will directly affect where the form is located in the dictionary.

An even more challenging question concerns semantics (see Matthewson 2004 and Bochnak & Matthewson 2015 on the methodology of semantic fieldwork). A dictionary can offer a simple translation equivalent, but many words do not have an appropriate translation equivalent. One obvious reason for this concerns culture-specific objects and notions. Some dictionaries give a detailed explanation and a description of the cultural context (see Figure 2.1), but this is only possible if a linguist is a real expert not only on the language but also on the corresponding culture.

àtáyí , hàtáyí ʔóɓɓɓ : ʔóɓɓɓ < Maghribin Ar. 'at-ta:y via Songai attay or Hasaniya; cf. also Wolof attaya > **n green tea** ("Malian/ Mauretanian tea") [making: large quantities of tea and sugar are put into an iron tea-pot and are boiled; the liquid is poured several times into a cup and back to the tea-pot; the drink, very strong and frothy, is poured out into tiny glasses and consumed, while a new portion of water is poured into the tea-pot, and the procedure is repeated; then it is repeated for the third time, and the tea-drinking is finished (at least, in male company which is sometimes explained by the fact that 3 is a male number, and 4 is a female one). In Mali, tea-drinking is the most common way of spending leisure-time. The green and the "European" tea (in teabags) is considered to be different drinks; the latter is called *liptón*] ʔɔ̀ɔ̀-jùtɛ́ (b) ; ʔ̀ m̀ɔ̀na DM the tea is ready {to drink} ; kà ʔ̀ wúli DM to make tea ; ʔ̀ dáfara (b) tea-drinking is over (tea has been made three times)

Figure 2.1. An example of an entry containing a cultural context description from a Manding–English dictionary (Vydrin 1999)

It takes a lot of work to get semantic data and to formulate an accurate description for the dictionary. There are many words which are difficult to translate because the native speakers know them only in their language. This is particularly the case with the names of plants, mushrooms, fish, etc., especially given the fact that they do not always correlate with the scientific classification. Accurately identifying flora and fauna to allow Latin names to be given for such objects is a time-consuming task that requires specific skills on the part of the linguist. One approach a linguist might take to this specific task would involve walking in the forest together with the native speaker and making a video recording of how (s)he names various plants⁸, another would be to show pictures with different objects to the native speaker and ask him/her what they are called.

A well-known problem is compiling a set of words for a dictionary. There are publications containing wordlists that can be useful at the initial stage of lexicographic work (see, for example, Comrie and Smith 1977, Kibrik 1977⁹). A second method involves the researcher compiling his/her own wordlists, which may be organized into semantic groups. Yet another approach is picking words from spontaneous speech samples.

2.2.8. Conducting experiments

Though any controlled speech can be considered as an experiment, here I mean all data collection methods that were not discussed above. Every experiment requires a specific methodology and, while it is difficult to discuss the general principles of conducting experiments, the overarching principle is that the methodology should be accurately described and the researcher should adhere to it. In this section I briefly mention several different experiments to illustrate that a field linguist's creativity should not be limited by established

⁸ Bouquiaux and Thomas (1992) contains many pictures that can be very useful in fieldwork.

⁹ For researchers who use Russian as the intermediary language, the Russian version of this wordlist might be more useful; see Kibrik 1972.

data collection methods. I will give three examples from different subfields of linguistics: morphology, syntax and phonetics.

From 2015 to 2016, Timofey Arkhangelskiy from the University of Hamburg and Maria Usacheva from Lomonosov Moscow State University investigated the influence of construction type (comparative deletion, N'-ellipsis, right node raising, coordinative construction, etc.), topic/focus, and contrast on the use of case compounding forms in Beserman Udmurt. As such forms are not frequent in Beserman, it was impossible to study them using spontaneous speech corpora as they did not contain a sufficient number of occurrences. To acquire such forms in a maximally natural way (which cannot be achieved through the elicitation technique), the researchers designed a series of experiments using a method called "referential communication tasks"¹⁰.

During these experiments the native speakers were communicating with each other, but could not see each other. One participant (the Director) looked at non-verbal stimuli and tried to explain to his/her addressee (the Matcher), what (s)he should do with an identical set of stimuli (see Figure 2.2). In one series of experiments, the researcher placed pictures on a big coloured map of the Shamardan area and in another series he moved small toys through a model of the Shamardan area in front of the Director. The Matcher could not see what the researcher was doing but listened to the Director's instructions and was able to ask clarifying questions. The Matcher's task was to replicate what the researcher was doing. In other series of experiments, the Director watched the researcher placing cards on the table in a certain order, and the Matcher had to place identical cards on the table in the same order on the basis of the Director's instructions.

The referential communication tasks method gave an opportunity to model certain aspects of information structure, as well as to stimulate the participants to use elliptical constructions. The experiments were successful as all the hypotheses were tested positively. Moreover, during these experiments the researchers recorded dialogues that contained more than 70 examples of case compounding forms (for comparison, in the spoken corpus of Beserman containing, at that time, ca. 65,000 tokens only four examples with case compounding forms were attested). Some of the case compounding forms recorded in these dialogues had never been attested in the Beserman data collected previously. (See details in <https://ojs.utlib.ee/index.php/jeful/article/view/jeful.2018.9.1.05>).



Figure 2.2. Maria Usacheva and Timofey Arkhangelskiy conducting an experiment with the native speakers of Beserman Udmurt (photo by Olga Pozdnyakova, 2015)

¹⁰ This method was introduced by Krauss and Weinheimer (1966).

In 2021, Sofya Ganieva from Lomonosov Moscow State University investigated the phenomenon of indexical shift in Mishar Tatar. The main goal of the experiment was to define how constructions like ‘Alsu said that I went to the city’ were perceived: either Alsu went to the city (indexical shift is detected) or the speaker went to the city (indexical shift is not detected). For this experiment a number of pictures were prepared (Figure 2.3 gives an example).



Figure 2.3. A picture for the experiment on indexical shift

These pictures were shown to Tatar native speakers via Zoom Video Communications software. After seeing the picture for a few seconds and hearing the corresponding sentence (which had been recorded in advance with another Tatar native speaker), the native speaker answered the question ‘Who went to the city?’. His/her answer and the time lag before responding were recorded and later analysed. The experiments used different types of pictures with varying parameters and were carried out with two groups of speakers: children under 18 and adults. Each group included 17 Tatar native speakers.

The experiment showed that indexical shift in Tatar is almost obligatory. In cases where both interpretations occurred, those with the shift were still basic, while interpretations without indexical shift (obtained mainly from children and younger adult speakers) appeared to be due to some additional factors, which were explained by the researcher as being due to the effects of bilingualism, since there is no indexical shift in Russian.

(see details in <https://bit.ly/3gBvdYn>)

In 2017, Polina Pleshak from Lomonosov Moscow State University studied intonational patterns in Hill Mari. Since examples produced through elicitation can show less natural pronunciation, a special experimental technique was chosen for this research. She used the Typological questionnaire developed by a research group of Potsdam University (Skopeteas et al. 2006), which was designed for collecting data on information structure. As intonation correlates strongly with information structure, this questionnaire allowed data to be collected with different intonational contours. Each experiment consisted of 29 tasks that were distributed among 4 sessions with each native speaker. The main types of tasks were (i) description of one picture / video, (ii) description of a sequence of pictures / video, (iii) narration based on pictures / video, (iv) comparison of pictures / videos, (v) answering questions based on pictures / videos.

The stimuli were shown to Hill Mari native speakers as a PowerPoint presentation. For example, Figure 2.4 shows a sequence of pictures for task (ii). Necessary adaptations of the

original questionnaire were made to make the context more natural (e.g. a lion was replaced with a cow). There were four sequences in total with the same objects, and each of them was shown during a different session. The native speakers saw one picture at a time, but they were aware of the fact that the four pictures were related and had to be compared. All answers of the native speakers were recorded and saved in WAV audio files.

These tasks allowed information on intonation in different types of constructions to be gathered where features such as given vs new, topic, focus and contrastivity were controlled. Each produced sentence was annotated in Praat for information structure concepts and for intonation patterns. The Tones and Break Indices (ToBI) transcription conventions (Pierrehumbert 1980), adapted for Hill Mari, were used.

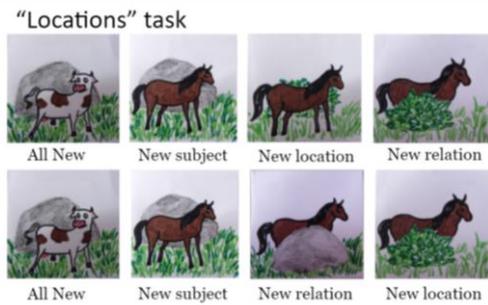


Figure 2.4. Example of a sequence of pictures used as stimuli in the intonational patterns experiment

Many other examples of phonetic experiments in the field can be found in a brilliant book by Peter Ladefoged (Ladefoged 2003).

2.2.9. Remote fieldwork

Advances in technology (including video calling software and improvements to internet speeds) have made it possible to conduct remote fieldwork where a researcher can sit in his office and communicate with a native speaker who may be thousands of miles away. Remote fieldwork is not a special data collection method and it is possible to carry out all techniques discussed above. However, it is a special mode that has its own pros and cons. I will not discuss the technical details of remote fieldwork as the equipment and means of communication develop so fast that such information will become outdated very soon.

The positive sides of remote fieldwork are self-evident:

- the researcher does not have to embark on a time-consuming and costly trip;
- remote fieldwork can be easily combined with other academic activities;
- the researcher can work with native speakers living in different places at any time.

The simplest type of remote fieldwork is messaging between the researcher and the native speaker via text message, Skype, and various messaging platforms. It can be very useful while preparing an article or presentation as it is an easy way for the researcher to get some missing data and check previously collected data. However, this method cannot be used for proper documentation because it does not collect primary data (i.e. audio or video recording). Also it requires that the native speaker is able to write in his/her language; this is usually not the case with unwritten languages, although some native speakers can write down words in their native language using the writing system of a major language that they know.

More advanced types of remote communication with a native speaker allow one to obtain audio and video recordings. Let's consider how the different data collection methods can be substituted with remote work.

Recording spontaneous speech during a video or audio call is not very promising. First, in many countries the quality of the connection is not always sufficient, especially in rural areas. For example, in Russian villages, even talking on the telephone is problematic as the

connection often drops out and so segments of speech are lost, and a call made over an internet connection may be even worse. Though the quality of connection has improved in many places during the last decade, the general situation is still far from ideal. Second, the standard equipment (e.g. a typical computer microphone) is not capable of recording at the required quality. In such a situation, the most reliable method is to train a native speaker to make recordings (see also Section 2.4) and to provide him/her with the necessary equipment. In this case much will depend on the accuracy of the native speaker, but there is a chance of getting very valuable recordings using this approach (e.g. some people speak more naturally with their friends than in front of a researcher). Of course, it is easier to organize this with audio than with video recordings, since a good video camera is much more expensive than a voice recorder and requires more proficiency in making the recordings. If a native speaker is trained to transcribe recordings, (s)he can also prepare the transcription and translation. In this situation, the native speaker would be a full member of the research team.

The elicitation method is less problematic in the context of online work. The native speaker can repeat sentences to compensate for the connection dropping, distortions in the recording, etc. However, it is good if the native speaker has an appropriate voice recorder to make a high quality recording of the session independently from the online recording made by the researcher.

For recording a phonetic questionnaire, it is best to use good equipment and to avoid online recording.

Online work is especially promising for verification of data and collecting negative data.

Collecting data for a dictionary can also be done online but much depends on the particular task. Recording audio samples is possible if the problem of audio recording quality is addressed, but the discussion of meanings and translations does not require additional equipment.

Some experiments can also be done online (see the example of the experiment on indexical shift in section 2.2.8. *Conducting experiments*).

Obviously, remote fieldwork is more problematic with elderly people because it may be difficult for them to get acquainted with modern equipment. However, many of them have younger family members and their grandchildren, for example, can be easily taught to operate a voice recorder, camera, or specific computer software in order to manage the technical side of the remote fieldwork.

Though remote fieldwork also has its own negative sides and creates some new challenges for the linguist (first of all, providing native speakers with the necessary equipment), it is a very promising area that is developing and should not be underrated.

Besides the possibility of remote fieldwork, the internet is a source of linguistic data of various genres, including lots of written texts, chats, communication during video games, etc.

2.3. Typology of language consultants

A linguist should never forget that the person working as a language consultant is first and foremost a human being and not just a source of information. Language consultants, just as all people, are unique, and some of their differences may be relevant to field work. It is important to bear in mind individual characteristics of language consultants and not to divide them into “good” and “bad”. I would argue that there are no “bad language consultants” in the sense that they are incapable of working with a linguist. It is rather a problem of the researcher who is unable to recognize the strengths of a native speaker and to train him/her well to become a good language consultant. The task of the researcher is to identify and understand the individual preferences of every language consultant and to find the most convenient methods of working with him/her.

In the current section, I discuss several characteristics that can distinguish language consultants from the point of view of fieldwork. This is intended as an empirical typology that does not purport to be a solid theory but rather helps a researcher to realize the abilities of a native speaker and to find him/her the most appropriate task in the fieldwork process. In fact, the characteristics discussed below are not specific to research on small or unwritten languages, but they are applicable to any speaker (including the researcher) working as a language consultant.

Again, I would like to emphasize that the characteristics discussed below should never be treated as virtues and vices of the language speakers, just as speaking a particular dialect as opposed to another dialect should not be considered as advantageous to a person. Being able to organize your work with respect to a person's individual qualities is the best way to avoid the false idea of "good" and "bad" language consultants.

(a) The concept of the norm

As mentioned in section 2.1.2., on the problems of transcription, a linguistic norm exists even in unwritten languages. In cultures with a developed written tradition, educated people use dictionaries and grammars to check the normativity of pronunciation, forms, grammatical constructions, etc. In unwritten languages, the concept of the norm is much more flexible. Every language can be schematically described as consisting of three zones: (1) what is often said and definitely correct, (2) what is never said, and is definitely incorrect, (3) a grey zone between (1) and (2) that consists of marginal phenomena. This "grey zone" is usually very large. When evaluating a phenomenon, a language consultant may have different approaches to this grey zone: (s)he may assign this phenomenon to the correct zone or to the incorrect zone. Based on this approach, it is possible to distinguish two groups of language consultants that can be named "pedants" and "democrats" respectively. Of course, a whole spectrum of possibilities exists between these two extremes. Pedants are more sensitive to the norm (of course, the norm is understood in their own sense) and do not admit forms or constructions that look suspicious. Democrats are much more flexible and easily admit even marginal constructions or forms. They often follow the principles "if it is understandable, it is correct" and "everyone speaks as (s)he wants". An experienced researcher can easily use these features. For example, while working with democrats, (s)he can outline all potentially possible phenomena belonging to the topic under investigation and later test them with pedants. Thus, (s)he will be able to distinguish all three zones under discussion.

(b) Purism

This feature corelates partially with the previous one but it is not the same. There are some language consultants that are very sensitive to a specific set of phenomena that they consider inappropriate. This often relates to some marginal lexical items (including obscene words) and/or borrowings. The data obtained from purists are biased so it is recommended to consider the opinion of other speakers too.

(c) Attitude to more prestigious varieties

It is rather atypical for a native speaker to know only his/her native language (in particular, for speakers of the minor Uralic languages it is extremely rare nowadays). Usually language consultants know some other language (or several languages), which is more widely spoken and, correspondingly, more prestigious. If it is a language of the same community and especially if it is a standard variety (in contrast to the speakers' native variety), the native speaker might think that it is better to use this more prestigious variety. From a practical point of view, it is not always easy to explain to a language consultant why the researcher wants him/her to speak the low-prestige variety known in a particular village or group of villages instead of the "normal" language, which is known to many people.

In 2003, the Department of Theoretical and Applied Linguistics of the Lomonosov Moscow State University organized an expedition to the village of Shamardan to investigate the Beserman variety of Udmurt. One day my colleague and I were recording stories told by two local women. A granddaughter of one of them – a girl of early school age – was playing around. My colleague asked her: “Can you speak this language?” The girl started to giggle and said: “Do you mean this incorrect language?” From the point of view of a schoolchild attending a local school and studying the standard variety of Udmurt as a native language, the local Beserman variety was “an incorrect language”.

It is very important to explain to the language consultant that you are interested in his/her native variety but not in the more prestigious variety of the language, otherwise the language consultant who is concerned about the prestige of her/his speech will try to use elements of the more prestigious variety or may fully switch into it.

(d) The concept of the idiolect

Most native speakers understand the concept of the idiolect (i.e. the language of a particular person) very well. However, for some people this concept is not clear and they understand only the concept of a language in general.

In 2003, I participated in an expedition to a Komi village organized by Lomonosov Moscow State University. I still do not know why, but almost every older native speaker with whom I worked was unable to answer the question of whether (s)he could use a particular word or construction in his/her speech. Instead (s)he replied that people in the village could speak or could not speak this way. In other words, all judgments were objectivised and the whole variety was considered instead of a particular idiolect.

As one of the tasks of the researcher is to distinguish idiolectal features from the features common to the whole variety, it is good to train speakers to point out what (s)he can say in his/her own speech or what (s)he can hear from others.

(e) Accuracy in translation

The problems of translation were partially discussed above in section 2.2.3. on recording elicitation. Every native speaker has his/her own view on the idea of translation. Some native speakers prefer the literal translation (word for word, using the same grammatical forms where possible). Others try to translate maximally close to the real language. At the same time, the researcher might need different kinds of translation for his/her work. Compare the following: (i) the recording of a phonetic questionnaire, where the translation should contain a specific form in a specific frame sentence but all other features as well as the meaning are irrelevant; (ii) recording of inflectional forms, where the translation should contain specific grammatical forms, but it is not important if these forms are properly used; (iii) studying the syntax, where the translation should have a natural word order and the forms should be properly used. The work will be productive if the researcher is able to define what type of translation the native speaker prefers, and can explain the current task to the native speaker.

(f) Sensitivity to semantics and pragmatics

It is typical for native speakers to not treat sentences from questionnaires as something abstract but rather to interpret them as concerning himself/herself and/or his/her everyday life. As explained in Section 2.2.3, it is better to use maximally realistic contexts, and to avoid unrealistic or unnatural sentences. I have heard about dozens of absurd sentences that native speakers have been asked to translate. Among the most prominent are: “The boy hid from the

girl behind a flower”, “A young man loves a girl in the room”, “He hit an axe with a rooster”, “This tree is without crows”. Some language consultants are very sensitive not only to the naturalness of the sentence but also to the pragmatic features of the context.

I worked with an old Ingrian woman who was very sensitive to the real-world meaning of the example sentences she was presented with. She refused to translate the sentence ‘My neighbour bought a sheep’ saying that her neighbour had not bought any sheep. She also told me a story about my young colleague who was studying the locative cases and had asked her to translate the sentence ‘I jumped into the Luga river’. She described her reaction as follows: “I told him: “Are you crazy? Why did you need to do that? We’ll have to call the police! Why do you need such a sentence?””.

The opposite situation is when the language consultant completely ignores the pragmatic features and agrees to translate everything that the researcher wants. The researcher should be very careful as such translated data are not always reliable and may look extremely odd in publication.

Researcher M studied the inflection of adjectives in a Finnic language. She asked the native speaker – a woman who was very experienced in working as a language consultant – to translate the sentence ‘A grey wolf ate a white hare’. The native speaker translated the sentence but confused the order of adjectives, and produced the sentence ‘A white wolf ate a grey hare’. ‘No’ – said the researcher, ‘it should be vice versa’. ‘A white hare ate a grey wolf’ – translated the native speaker without a hesitation.

The researcher should ensure (s)he has at least a basic understanding of the culture of the language of study to make the contexts realistic and pragmatically correct. For example, the sentence “A man went to bring some water” sounds perfectly realistic for Finno-Ugric people but is very odd to people in Dagestan where bringing water is a women’s task.

(g) The notion of linguistic competence

Some native speakers have the opinion that their speech is completely correct and represents the language in the best way. In fact, this is not always true and so the researcher should be careful in making judgements. Other native speakers do not feel that confident and ask the researcher “Do you think I said it correctly?” Such doubts about their own competence are typical for speakers of languages on the verge of extinction. The negative consequences of such doubts manifest in the attempts “to construct” a correct form, which usually fail. It is important that the researcher encourages the native speaker to speak naturally without a fear of making mistakes.

There are native speakers who refer to the competence of other people, for example, “25% of people in our village say it this way”. It is better not to trust such estimations: it is unlikely that they are correct.

(h) Linguistic skills

It is not often that your language consultant has any form of linguistic education. However, language consultants differ with regard to their level of interest in the language and their linguistic skills. There is no direct correlation in terms of who will make the best language consultant – it may be the one with some form of linguistic education or the one who is a good speaker but is absolutely naïve in linguistic matters. In some cases, the latter may give better answers as these answers are not biased by his/her reflections. The researcher should try

to ascertain the level of linguistic skills of a language consultant and formulate the tasks so that they correspond to this level. Some native speakers are born linguists who are very interested in linguistic work and such a language consultant is a real treasure for a researcher. Figure 2.5 shows pages from the notebook of an Ingrian native speaker who made a wordlist comparing Ingrian, Estonian and Finnish words and supplied them with Russian translations.

Сравнение слов ингерманских, финских, эстонских и русского языков.				Александр	Полуниора	Александр	Валентин
История	Финский	Эстонский	Русский	Тие	Тие	Тээ	Варона
Целити	Целити	Синилеке	Голова	Тюо	Тюо	Тюо	Кели
Маат	Ца	Ца	Отец	Юофи	Юохи	Юох	Юофе
Маам	Йити	Эма	Мать	Танки	Амари	Амбер	Ветро
Чиг	Цооца	Ванаса	Возврата	Вене	Вене	Таата	Водка
Бааб	Цооайти	Ванаса	Бабушка	Лунки	Лунка	Лункас	Лонка
Миез	Миез	Миез	Мученица	Вити	Халаруса	Халевель	Витка
Наик	Наик	Наик	Женица	Веркель	Тейви	Теезел	Зарка
Хевене	Хевене	Хевене	Лонка	Тунки	Кели	Кели	Засе
Лехи	Лехи	Лехи	Корова	Тунки	Тунки	Тунки	Тас
Ламмаз	Ламнас	Ламнас	Обва	Кели	Кели	Кели	Калонка
Сина	Сина	Сина	Свинов	Бертти	Тюна	Тюна	Калманна
Кана	Кана	Кана	Курь	Тюни	Тюни	Тюни	Сокк
Койр	Койра	Койр	Савана	Тюни	Тюни	Тюни	Тюни
Киса	Киса	Киса	Кеина	Кюкка	Кюкка	Кюкка	Кюкка
Лунки	Цооцел	Лунки	Лебедь	Кюкка	Кюкка	Кюкка	Кюкка
Кони	Кони	Кони	Лыжница	Кюкка	Кюкка	Кюкка	Кюкка
Троти	Троти	Троти	Троти	Кюкка	Кюкка	Кюкка	Кюкка

Figure 2.5. Pages from a notebook by Nikolay D. Pöder (Ingrian, born in 1924)

2.4. Training language consultants

While describing linguistic fieldwork, I always distinguish the researcher from the language consultant. In fact, this difference is not absolute, since it is possible to train a language consultant and to improve his/her linguistic knowledge. There are two considerations here. First, the researcher should remember that being a language consultant is a skill, which – as with all professional skills – can be taught. And it is the task of the researcher to develop the ability of native speakers to work as language consultants. The main method of training the language consultant is to explain to him/her the essence of the linguistic work, to improve the attitude to his/her native language, and to justify the importance of the research goals.

Second, a trained language consultant is able to carry out some of the linguistic work without the continual assistance of a researcher. The data collection method that a native speaker can most typically master is transcribing speech samples. Of course, this may be a problematic task for elderly people but for young and middle-aged people it is usually not a problem, especially if the language consultant has a high school education and the transcription is not very complicated.

In 2001, a student participant, on the expedition to the Meadow Mari community organized by Lomonosov Moscow State University, was working with a local girl who studied at the Mari State University and had returned to her home village for the summer holidays. Though the official Mari orthography is Cyrillic, the transcription used in the expedition was based on the Latin alphabet. Just as the researcher asked the local girl to translate a sentence someone called him away and he left the language consultant for several minutes. When he returned he found that the consultant had translated the sentence into Mari and accurately transcribed it in his notebook. Over several sessions, the language consultant had grasped the principles of the transcription being used and was able to write in it, even though nobody had taught her how to do it.

A promising way to collect and prepare data, in collaboration with a trained language consultant, is as follows:

- a. The researcher goes to the field and collects some material.
- b. (S)he trains a local language consultant to transcribe speech samples and, if necessary, provides the language consultant with the required equipment.
- c. The researcher returns from the field and the native speaker sends him/her the transcribed speech samples via the internet.
- d. The researcher checks them and, if necessary, gives additional instructions to the native speaker.

This workflow can be very productive especially if the researcher cannot stay in the field for extended periods of time.

Chapter 3. Audio recording

- 3.1. Why audio recording?
- 3.2. How to choose audio equipment
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3.1. Why audio recording?

Even though audio recording is a standard in contemporary linguistic fieldwork, there are still a small number of linguists who do not make recordings or only do so sporadically. Is audio recording really that important? The answer is an emphatic “yes”. The main reasons for making audio recordings are the following.

1. There is no way to avoid mistakes if you are only writing the material down on a piece of paper. While working with a native speaker, the linguist is concentrated on the problems that are important for him/her, but (s)he can easily make a mistake in transcribing a form that is beyond the main focus. For instance, if you are focussed on a system of differential object marking you might easily miss the reduction of some vowel. Likewise, it is very easy to forget some diacritics or just to make a slip of the pen and, even if later you notice a problem, you may not have the possibility to check it, but in many cases you simply do not notice it.

Usually a linguist tries to make the most out of a session with a native speaker and to ask as much as possible, and so will not want to spend his/her time accurately checking every element of the transcription. Moreover, such checking can be very tiresome for the native speaker.

An audio recording solves all such problems because you can listen to the recording as many times as necessary.

2. There is no ideal transcription: any transcription is conventional.

Every transcription reflects some phenomena and ignores others. When a transcription is too detailed, it is rather difficult to use it and the possibility to confuse two almost similar sounds is very high. The level of specification depends on a particular task and may not be appropriate for all other tasks.

3. No one can predict what will interest the scholars in the future. Audio recordings allow the data to be used repeatedly for various kinds of research.

It is easy to do an experiment: transcribe a sentence in some language. Then try to answer several questions: (a) Is the initial sound in the first word longer than the initial sound in the second word? (b) Is the pause between the first and the second word longer than the pause

between the second and the third word? (c) Take two vowels transcribed with the same symbols and answer what is the difference between their second formant? (d) Which of these vowels is more intense?

It is evident that there may be many such questions and most of them cannot be answered if the speech is only transcribed, but they can be answered if there is an accompanying audio recording¹¹.

4. Transcription is always subjective.

The perception of speech and identification of sounds depends on many factors, including the native language of the researcher, his/her experience in the target language and in other languages, etc. If two linguists try to transcribe the same recording in a language that does not have an orthography or an elaborated transcription system, invariably there will be differences in the transcription.

I once decided to check how a portion of Votic folklore had been transcribed. In the monograph by Nenola (2002), one can find very interesting material: pieces of folklore collected from the same native speakers, almost at the same time but by different researchers (these researchers are famous linguists and philologists of the 19th and 20th centuries, such as A. Reguly, E. Lönnrot, D. E. D. Europaeus, P. Ariste, Ju. Mägiste and others). The result of my investigation into the transcription methods used, described in Markus & Rozhanskiy (2013), was striking: transcription conventions were crucially individual. For example, A. Reguly transcribed the marker of the inessive as *-za*, E. Lönnrot as *-ssa/-ssä* or more often as *-sa/-sä* and G. Rein always as *-ssa/-ssä*. Thus, even a transcription made by a highly qualified linguist is no substitute for an audio recording.

3.2. How to choose audio equipment

Two essential parts of audio equipment are the recorder and microphone. It is much easier to choose a recorder than a microphone, which is unfortunate because a microphone is by far the most important part of the equipment: the quality of the recording is determined primarily by the microphone. Ideally, when sourcing equipment, you should start by choosing the microphone. However, initially I discuss recorders, then microphones and later accessories.

Before discussing recorders, however, I should emphasize that I strongly recommend against making any recordings directly to a computer. First, it often happens that due to some failure during the session the whole recording is lost. Second, a computer can be a source of various noises that crucially decrease the quality of the recording. I have seen a number of attempts to record directly to a computer, but all of them were unsatisfactory from the point of view of contemporary recording standards.

3.2.1. Recorders

(a) Sampling rate and bit depth

The history of audio recording started with analogue devices: wax rolls, vinyl discs, reel-to-reel and cassette recorders, etc. Nowadays these have all been completely replaced by digital recorders. The main principle of digital recorders is that they discretize a signal. A sound wave can be represented as a function: for every moment (axis X) there is a correspondence of a particular intensity (axis Y), see Figure 3.1.

¹¹ Bown (2008: 16) notes: “Transcriptions are a pale shadow compared to the original audio and video”.

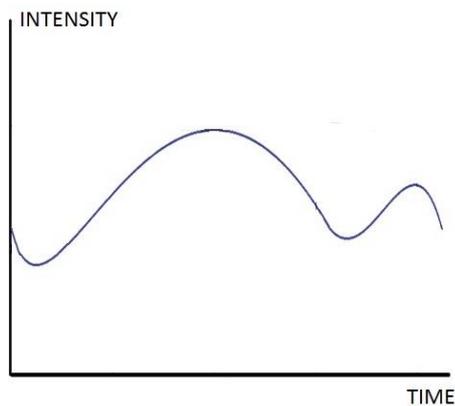


Figure 3.1. Sound wave

Discretization means splitting both axes into short intervals in order to represent a sound wave as a row of numbers (every number is a value of intensity for a particular moment in time). The shorter the intervals are, the closer the resulting contour is to the real sound wave. Figure 3.2 shows the difference between the less (left) and more (right) fine-grained discretization (the red line shows how the sound wave will look after the discretization has been applied).

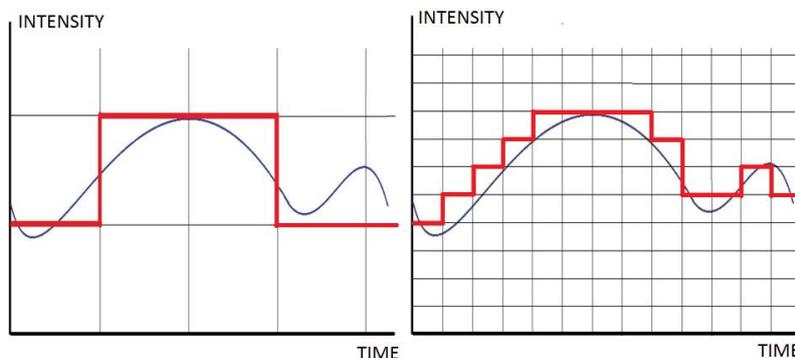


Figure 3.2. Discretization of the sound wave

The parameter that defines the splitting of the X axis (time) is called a **sampling rate**, and the parameter that defines the splitting of the Y axis (intensity) is called a **bit depth**. The latter parameter is simple: the contemporary standard is 16 bits for CDs and 24 bits for highly professional audio. Possible integer values are from 0 to 65,536 for 16 bits and from 0 to 16,777,216 for 24 bits. All contemporary digital recorders support at least 16-bit depth, which is quite enough for the recording of human speech. I am unaware of any reason to choose a higher bit depth: your files will be greater in size but it is unlikely that there will be any noticeable increase in quality.

The situation with the sampling rate is more complicated. The sampling rate unit is hertz (Hz). The number of hertz indicates the number of samples (intervals) per second. There is a correlation between this number and audible frequencies: dividing the sampling rate by two gives the upper limit of sounds which are audible by a human ear (about 20,000–22,000 Hertz, i.e. 20–22 kHz). This means that the sampling rate of an audio recording should be at least 40–44 kHz in order to cover the full range of audible sounds. In fact, 44.1 kHz is the standard value for audio CDs. The contemporary standard for a professional digital recording is slightly higher, at 48 kHz. I would recommend following this standard, although recordings made with a 44.1 kHz sampling rate are also perfectly acceptable. Though many contemporary recorders allow recordings to be made with an even higher sampling rate (e.g. 96 kHz), there is no need to use it for field recordings: there is no noticeable gain in quality when recording human speech but your files will be too large and processing them may end

up being problematic. In fact, the highest frequency sounds of human speech are sibilants and they are usually maximally intensive at 7–8 Hz (in some cases up to 10 Hz). This means that even if you made an audio recording with a sampling rate of 22.05 kHz you would capture all sounds. However, I do not recommend using this sampling rate for the recording, although you can downsample your files to this rate in order to create smaller copies of your audio recordings if hard drive space is a concern¹². In this case your recordings will be easily accessible while the original recordings (produced with a 48 kHz sampling rate) that are more space consuming can be stored on an external device and/or in the cloud. You should never downsample to an even lower rate (e.g. 11,025 Hz) as you will lose sibilants and many other sounds will be distorted.

In summary, then, the primary requirement of a recorder is the ability to record with a 48 kHz sampling rate.

(b) Format of files

The next important feature is the supported **file format** (or file formats because many recorders support more than one format).

There are many formats of audio files. The features that distinguish these formats are:

- (a) uncompressed vs compressed formats
- (b) if compressed, whether the compression loses data or is lossless
- (c) free vs licensed formats
- (d) device-specific vs compatible with various devices.

Formats which involve lossy compression (e.g. MP3) are strongly discouraged. The compression in such formats is based on keeping the main part of the sound and removing “insignificant” parts. This means that the quality of the recording is diminished and it is impossible to predict if this loss is significant or not. Lossless compression is based on methods similar to the ones used in file archivers. Such formats (e.g. FLAC or ATRAC Advanced Lossless) do not reduce the quality of the sound but if the file becomes corrupted it is more likely that the whole file will be lost when compared to uncompressed formats (e.g. WAV, AIFF).

If you are using a licensed format (e.g. MP3) you may need to buy a license to disseminate your recordings. For these reasons, free formats are preferable. And of course, it is better to use formats compatible with various devices.

The contemporary standard is the WAV format. This is an uncompressed free format, which is supported by most professional or semi-profession voice recorders and audio editing software. The only problem with this format is that audio files are large: one hour of stereo recording with 16-bit depth and 48 kHz sampling rate results in a file size greater than 650 Mb¹³. However, the capacity of storage devices is ever increasing and so this problem becomes less and less significant.

(c) Recording media

There have been many changes to recording media in the history of audio recording. At first recordings were analogue, on wax rolls, magnetic tapes, etc., before being replaced with digital recordings on mini-discs and memory cards. The contemporary standard is a memory card, so nowadays a field researcher does not have to worry about choosing which recording

¹² Bown (2008: 18) notes: “... you may find that downsampling your recordings produces files which are easier to work with. Many linguists use files downsampled to 22,050 Hz”.

¹³ It is easy to understand why WAV audio files are of this size: 16-bit depth means that 2 bytes are needed to encode the intensity value, per unit of time, per channel, so for the two channels of a stereo recording, 4 bytes are needed per time unit. A sampling rate 48 kHz means that 192,000 bytes (=48,000 x 4) are needed to record one second of audio. One hour contains 3,600 seconds, thus: 192,000 x 3,600 = 691,200,000 bytes or about 659 Mb.

medium to use. The only thing that you should pay attention to while choosing a recorder is whether it supports removeable memory cards. Recorders with built-in storage are less convenient: once the storage is full you must transfer your data to a computer and this is obviously problematic during a session or when you do not have a computer at hand. A removeable card can be easily changed in a matter of seconds and can serve as an additional storage for your files. A recorder may have some limitations as to the capacity of the memory cards which it will accept, but even a 16 GB card can save more than 20 hours of high-quality recordings (48 kHz, 16-bit, stereo).

(d) Power source

Even if a recorder allows the use of AC power, it is better to avoid it, since a background noise may appear on the recording if the power supply network is of low quality. I also do not recommend using built-in batteries: if the battery runs down during the fieldwork session, you would need to stop recording. Most contemporary voice recorders use replaceable AA batteries. It is ideal if your recorder supports both rechargeable and non-rechargeable batteries (see details in Section 3.2.3).

(e) Recording level control and the recording indicators

The manual control of the recording level is a necessary feature of a good recorder. Automatic control of the recording level is undesirable as it does not distinguish well between signal and noise, and may boost the volume in pauses between words resulting in background noises becoming louder than they should be. Manually controlling the recording allows the researcher to watch the indicators of the sound intensity and decrease or increase the recording level as necessary. It is important that these indicators are clearly seen: if they are too small or too indistinct it may be difficult to control them (see figure and discussion in the subsection *Convenience of buttons* in this section).

(f) Interface (plugs)

The recorder and the external microphone are joined with a connector (plug). There are three main types of plugs that are usually used with audio recording equipment: 3.5mm mini jack, 6.35mm jack, and XLR plugs (see Figure 3.3). The latter is considered a more professional connector. Unlike the mini jack and jack, it has a latch that prevents it from being accidentally unplugged. The general consensus is that it is better to use XLR connectors as they are considered more reliable. However, I have not encountered any problems with any of these connectors. The more important consideration is that the recorder and the microphone have the same plugs. Of course, there are various adapters that allow pieces of equipment with different plugs to be connected, but the use of adapters is not recommended: any additional link in the electrical circuit increases the likelihood of problems. In other words, it is better to use equipment with the same plugs. Some recorders support different types of plugs (e.g. Zoom H4n has both XLR and mini jack inputs).



Figure 3.3. Mini jack, jack and XLR plugs

(g) Weight/dimensions

Weight and dimensions of the recorder are important for a researcher who has to cover long distances on foot. Fortunately, most contemporary recorders are rather compact and this parameter is not as important as it used to be.

(h) Convenience of buttons

One issue that is not clear from a standard description of the device and its characteristics, but which is very important in the process of fieldwork, is the convenience of the buttons. The main buttons for starting, pausing or stopping the recording, and for increasing or decreasing the recording level should be prominent and easy to operate. During a fieldwork session, a researcher will be concentrated on his/her work with the native speaker and the recorder should not become a distraction. Pushing an incorrect button can sometimes have consequences for the whole fieldwork session. Figure 3.4 is an illustration of this problem. It shows two models of Zoom recorders: H4 (left) and its successor H4n (right). The first of these models does not have a convenient design of buttons, and the developers realized this problem. Instead of one button that used to have several different functions, the new model has several separate buttons which are clearly labelled. The recording button was placed closer to the stop and pause buttons. The size of the indicator panel was increased and indicators were made more distinguishable.



Figure 3.4. Different design and layout of buttons on two models of Zoom recorders

(i) Remote control

A remote control, while not strictly necessary, can be very useful. First, it allows the researcher to operate a recorder even if it is at some distance. This may happen, for example, when the native speaker is sitting far from the researcher and the length of the microphone cable is insufficient to allow the microphone to be near the native speaker and the recorder near the researcher. Second, it prevents you from touching the recorder and making additional noise.

The remote control can be wired or wireless. I suppose that the latter is preferable. However, it seems that a remote control option is absent from most contemporary recorders, and even if it exists it is rarely used by field linguists.

The remote control devices for two models of recorders are shown in Figure 3.5.



Figure 3.5. Zoom H4n wired and Edirol R-09 wireless remote controls

(j) Brand

As of 2021, there are four brands of recorders that are popular among field linguists:

- Tascam
- Zoom
- Roland (previously Edirol)
- Marantz

The price of a recorder which is suitable for high-quality field recordings usually starts around 150–200 euros.

Contemporary recorders usually have various options that are unnecessary for linguistic fieldwork. Some of these options may even be detrimental to the quality of the recording, including those that process the sound during the recording, in particular noise reduction and any other audio filters. The reason these options are discouraged is very simple: a far better result can be achieved with audio editing software, because it allows you to make decisions about the processing and select the best parameters. Moreover, audio editing software is continually improving, but if the recording was made using a filter on the recording device it is impossible to remove the original filter effects to take advantage of the functions in the software.

3.2.2. Microphones

3.2.2.1. External or internal microphone?

Most audio recorders have an internal microphone that can be used for recording. The quality of internal microphones in contemporary audio recorders is rather high and some researchers use them in fieldwork. However, for high-quality recordings it is recommended to use an external microphone. Even if we leave aside the question of microphone quality, there are solid arguments in favour of an external microphone. First, it is easier to place an external microphone closer to the native speaker's mouth (see Section 3.3). Second, touching the recorder (e.g. in order to increase or decrease the input volume) generates a small amount of noise, which is picked up by the internal microphone. Third, if you do not use a special stand for the recorder (and most people do not) any noise coming from the surface where the recorder is placed (e.g., a finger or pen being tapped on the table) is picked up by the recorder. Some people try to hold the recorder in their hand but it does not solve the problem: it is difficult to hold a recorder for a long time, your hand may generate noise, and the constant small changes in the position of the recorder will create an impression that the native speaker is constantly moving as his/her voice becomes louder or weaker, etc.

Of course, if recording conditions are close to ideal (an isolated room, almost no external noise, etc.), the difference between internal and external microphones is reduced. However, if recording conditions are not the best (as is usually the case in the field), an external microphone is definitely the preferred option. Since using an external microphone is a standard in contemporary field linguistics, below I discuss only external microphones.

3.2.2.2. Main features of a microphone

The main categories of microphones are defined by two parameters: (a) power source and (b) directionality.

(a) Power source

There are three possible options concerning power supply for a microphone: (1) it uses the power of the sound wave and does not need any additional power, (2) it uses an external source of power, (3) it uses its own (internal) source of power.

The first of these types is called the **dynamic microphone**. It works on the same principle as an audio speaker but reversed: the sound wave moves a membrane and the attached induction coil produces the current. Dynamic microphones are usually used as simple computer microphones or for some specific purpose (e.g. for live concerts, etc.). They are relatively cheap. When I started to make my own field recordings (at that time I was short on money) I realized that even a simple dynamic microphone plugged into a cassette recorder increased the quality of the recording greatly. In general, this microphone produced recorded speech of reasonable quality (the sound was not distorted), but its main problem was that it picked up all background noises. Thus, the recordings were good in a quiet isolated room but any background noise negatively affected the quality of the recording.

Unlike dynamic microphones, **condenser microphones** need a power supply. They can be built on different principles, but one of the main types of condenser microphones is an electret microphone, which requires less electrical power than a conventional condenser microphone. There are two possible sources of power for condenser microphones, either phantom power (i.e. power taken from the recording device which the microphone is plugged into) or a battery installed in the microphone. As the capacity of the batteries in the recorder is limited, it is not recommended to use phantom power; it is better if a microphone has its own battery. It is typical for a battery in a microphone to last many dozens of hours so you do not need to replace it too often (see also Section 3.2.3 below). The recorders that support phantom power (e.g. Roland R-05/R-09, Zoom H4/H6) usually have it as a switchable option; do not forget to switch it off if this is an option on your recorder.

Thus, the preferred type of microphone is a condenser microphone with a battery. If your microphone uses the same type of batteries as your recorder (usually AA), it saves you the having to take two separate sets of batteries for your microphone and your recorder. However, I would not recommend using rechargeable batteries for a microphone: since they will only need replacing rarely, you will not gain much, whereas rechargeable batteries will drain faster even in a switched off microphone than non-rechargeable batteries.

(b) Directionality and spatiality

Every microphone picks up sounds from a defined space with sounds outside this space being suppressed. This means that there are more and less sensitive zones for the microphone. By directing the microphone towards the signal and by leaving noises in less sensitive zones the signal-to-noise ratio is increased (see Section 3.3) and the quality of your recording is improved. Figure 3.6 demonstrates the main types of microphones with respect to their directionality.

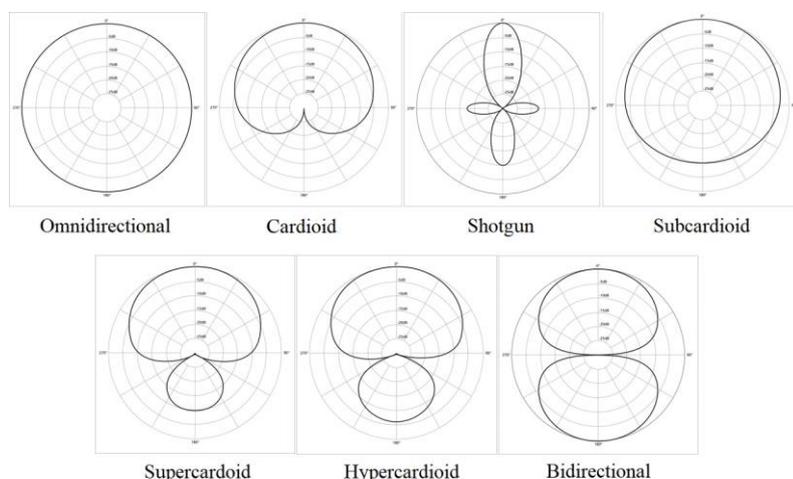


Figure 3.6. Directionality of the microphones of various types

From the point of view of field linguistics, there is no “best directionality”— each of them suited to particular tasks and particular situations. In any case, it is important to be aware of the directionality of your microphone to ensure you position it correctly during the recording session.

Microphones can be mono or stereo. The sound from a mono microphone is either recorded into one channel, or the same sound is recorded on two channels. A stereo microphone is in fact a set of two combined mono microphones, which record sound independently into two channels for improved spatiality. The difference between mono and stereo recordings is not too important from the point of view of linguistics tasks. However, a stereo microphone:

- makes the sound more natural;
- may assist in better distinguishing different sounds, and may be useful during transcribing;
- may be used for separating the voices of different speakers (see Section 3.3.2).

The advanced version of the stereo recording is a binaural recording. The main idea of this method is that the recording should imitate the sound exactly in a way a human can hear it. In order to achieve this effect, two microphones should be placed in a mannequin head that has an accurate copy of ears, ear canals, etc. As such a system is rather complicated, there are different substitutions for it. The most widely known is the ORTF recording introduced by the Office de Radiodiffusion Télévision Française of Radio France around 1960. For this recording, two microphones were disposed at a 110-degree angle and with the distance of 17 cm between them (the average distance between human ears), as illustrated in Figure 3.7.

Microphones located at such a distance are not very suitable for a portable voice recorder but some recorders try at least to place the microphones at such angle (see Figure 3.4 with Zoom recorders).

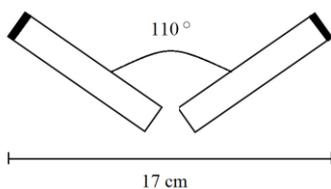


Figure 3.7. ORTF recording

However, the difference between these variants of stereo recording are not very significant for the main linguistic goals: (a) to recognize speech and transcribe it, and (b) to use phonetic software to analyse this recording. Three main variants that the researcher should choose between are the following: (a) a mono shotgun microphone, (b) a stereo cardioid microphone, (c) a mono omnidirectional microphone.

Advantages of a shotgun microphone are especially significant under the following circumstances:

- the recording is made in a noisy and/or crowded place where you need to pick up the voice of a particular speaker;
- it is not possible to mount the microphone close to the native speaker (for this reason, it is better to use a shotgun microphone when you are making a video recording).

A stereo cardioid microphone is better suited to a relatively quiet place. It gives a voluminous sound and creates a more natural impression of the surroundings. This type of microphone is preferable for recording dialogues (see Section 3.3.2).

One particular mono omnidirectional microphone which can be very useful in fieldwork is a lavalier microphone (also called a lapel or clip mic). This small microphone is attached to a tie, collar or some other item of clothing near a speaker's mouth. It is a short-range microphone, so it picks up only the closest source of sound (i.e. the native speaker) and reduces all other sounds. Though a lavalier microphone may be the best solution when recording a monologue, recording more than one person becomes a more complicated task. The latter is a very frequent situation in the field because it includes both communication between two or more native speakers and communication of a native speaker with the researcher (i.e. it concerns elicitation and some other data collection methods). The recording of more than one speaker via a lavalier microphone can be organized in two possible ways:

(a) The researcher uses two or more microphones and recorders (i.e. each microphone is connected to a different recorder). In this case the problem of synchronization of the recordings arises.

(b) The researcher uses two or more microphones connected to a single recorder. The simplest variant is when one microphone records to the left channel while the second microphone records to the right channel. Such a set-up is very useful for transcribing of the recording: if two speakers talk over each other, you can easily separate them. If you wish to record more than two speakers, this method is possible if you have a recorder which supports more than two microphones. For example, Zoom H6 supports up to four external microphones with each of them recording to a separate channel.

Another problem with a lavalier microphone is the connection with the recorder. Lavalier microphones may be wired or wireless (the latter are more comfortable as the distance between the recorder and the native speaker is not limited by the length of the wire).

Though you can get information about the sensitive zone of a microphone from the description of the product, it is better to check it by making various sample recordings. Some microphones have a switch which allows you to alter the microphone's directionality, see Figure 3.8.



Figure 3.8. Microphone switches to alter the microphone's directionality

(c) Frequency response

One of the basic characteristics of a microphone is the frequency response. It is always indicated as an interval (e.g. 20–20,000 Hz) and often as a graph (see Figure 3.9). The principle “the wider the range the better the recording” does not apply to the situation of field recordings. A field linguist primarily records human speech. The high frequency range is not very important from this point of view, but if a microphone is very sensitive to high frequencies, it will capture more high frequency noises, such as birds singing, etc.

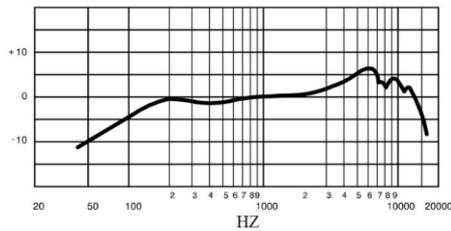


Figure 3.9. Example of a frequency response graph

The main problem associated with choosing a microphone is that such formal characteristics as the frequency response, and even a frequency response graph, cannot exactly predict the quality of the recording. Only testing the microphones in real working conditions can show which are more and which are less suitable for your particular tasks.

(d) Plugs: jack vs. mini jack vs. XLR (XLR +48)

As already mentioned in Section 3.2.1, it is best when the microphone and recorder use the same connections, otherwise you have to use adapters, and this makes the connection less stable.

(e) Weight/dimensions

There is no evident correlation between the size of the microphone and the quality of the recording. Though there are some correlations between microphone characteristics and the size of its membrane, there is no simple rule of the type “the bigger the microphone, the better the quality of the recording”. However, the weight of the microphone is important if you have to carry all the equipment yourself. From this point of view, microphones which are too heavy are not convenient.

There is also a psychological factor: big microphones may seem intimidating for the speakers. However, there is no strict correlation here.

(f) Microphone stand and handle

It is not possible to hold the microphone in your hand all the time. Also, the recording quality will suffer. Preferably, a stand should be used to position the microphone on the table or on the floor. Even if you hold the microphone in your hand, it is better to use a special stand for holding the microphone by hand and to avoid touching the body of the microphone.

Usually microphones come with a stand, however, it is not always the case that it is the most appropriate for your recording conditions. It is not worth rejecting a microphone because it does not have the required stand – you can buy a stand separately. However, it is important to make sure that your microphone can be fixed to the new stand as there are different stands have different fixings. A detailed discussion of microphone stands can be found in Section 3.2.3.

(g) Windscreen

A windscreen is an accessory used to protect the microphone (or rather the recording) from the effect of wind. It will be discussed in Section 3.2.3. As windscreens are usually sold together with microphones but not as separate items, it is best to check whether one indeed comes with the microphone and if it is aimed at the level of protection required by your field conditions.

(h) A manufacturer

There are many companies that produce high quality microphones, e.g. Beyerdynamic, RØDE, Audio Technica, Sennheiser, Shure, etc. Among my colleagues, the most popular manufacturers are AKG and Sony, but I am not in a position to claim that one manufacturer is principally better than others.

3.2.3. Accessories

(a) Batteries

Batteries are needed for both the recorder and the microphone. Microphones do not usually consume much power, and one or two batteries are enough for several weeks of work (of course, the exact details depend on the particular battery and the microphone in question: it is important to know their characteristics in advance). Even so, it is important to switch off the microphone as soon as the recording session has finished.

Unlike a microphone, a recorder is much more power-hungry device. If the recorder is compatible with both rechargeable and non-rechargeable batteries, it gives you more options for the efficient use of batteries.

The negative side of non-rechargeable batteries is that they are rather expensive (during intensive fieldwork you may need several of them every day) and rather heavy (when it concerns a big pack). The negative side of rechargeable batteries is that you need access to a power source to charge them. In this regard, it is important to know what the situation with the AC power supply is in your field. If there are problems with it, you should have enough non-rechargeable batteries. If the power supply is OK (i.e., there is power for at least several hours per day), then you can take several sets of rechargeable batteries and a pack of non-rechargeable batteries for unforeseen circumstances. If you take rechargeable batteries, it is important to have at least two chargers: they are not very reliable devices and can malfunction.

An important issue concerning both non-rechargeable and rechargeable batteries is that their quality significantly depends on the manufacturer. In any supermarket you can buy some cheap batteries but I do not recommend using them: their life is too short. I did not check all possible manufacturers carefully, but my experience shows that the trustworthy non-rechargeable battery brands are Duracell and Energizer. I tested many types of rechargeable batteries and concluded that one brand is definitely better than all others, namely Eneloop (see <https://en.wikipedia.org/wiki/Eneloop>)¹⁴. Of course, these preferences may change as the battery market is fast developing.

(b) Microphone stands

It is not good to hold the body of a microphone in your hand, and in general it is best to avoid all situations where you need to hold the microphone (see about touching the microphone in Section 3.3.1). Instead, the microphone should be located on a solid and stable surface. This requires a stand to fix the position of the microphone. Microphone stands can be tall (designed for a standing person) or short (for placing the microphone on a table at which a speaker is sat¹⁵). Tall stands are particularly uncommon when it comes to linguistic fieldwork.

The main functions of a microphone stand are the following:

- it avoids noise that would be generated by someone handling it;
- it helps with positioning the microphone closer to the speaker and in the right direction;
- it mitigates the effects of noises coming from the surface where the microphone stands.

A typical microphone stand is a tripod that has three legs (see Figure 3.10). Some tripods are of a fixed height while others have an adjustable height. Ideally a tripod should have feet made of rubber or some other similar material to reduce sounds coming through the solid surface where the tripod stands.

¹⁴ In my Roland R-09HR recorder, two 2500 mAh Eneloop batteries last for 5–6 hours of recording. I never wait until they are completely discharged in order to avoid losing a recording, and I replace them when the indicator shows that they are running out.

¹⁵ In some cultures, people prefer to sit or recline on the floor – in this case a table microphone can stand on the floor.



Figure 3.10. Various tripods

There are several standards of screws that connect a microphone (or a microphone holder that comes together with a microphone) and a tripod. If you do not have a microphone stand with the appropriate adapter there are two possible options:

- to buy a screw adapter;
- to buy a clip that connects to the stand and can hold the microphone (see Figure 3.11).



Figure 3.11. A microphone clip

If you have no choice but to hold the microphone it is best to use a special stand (see Figure 3.12).



Figure 3.12. A special stand for holding a microphone

If for some reason you do not use an external microphone, it is important to use a stand for the recorder and not to lay it down on a table (see Figure 3.13).



Figure 3.13. A voice recorder with a stand

(c) Memory cards

A recorder needs a memory card on which to store the recorded data. The commonest type of card used in contemporary voice recorders are SD cards, which have two main variants: SDHC and SDXC cards. The difference between these types is not of significance for an audio recording. However, there are cards of regular and reduced size (the latter are called microSD cards), and you should check which size is compatible with your recorder. The main characteristics of memory cards is their capacity and speed. The bigger the capacity of a memory card the more data it can store, but keep in mind that some recorders have a limitation on the memory card size they will work with. Read the instructions for your recorder before buying memory cards to find out what cards your recorder supports.

The speed of an SD memory card is indicated as their Speed Class, which denotes how much data can be written to/read from this memory card per time unit. Contemporary SDHC and SDXC cards almost always are of a sufficient speed for use with audio recorders, so this is not a parameter that researchers need to pay much attention to.

Though in general memory cards are reliable data storage devices, they can break down. For this reason, it is essential to take a spare memory card to all fieldwork sessions. This can also save you if you forget to free up space on your main memory card.

I do not recommend using SD cards as the main form of storage for you files although they can be used for an additional back-up. In this case, you would not delete files from the memory card but, when it is almost full, you would label it and replace it with a new one. Of course, in this case you should work out in advance how many cards you will likely need for your fieldtrip. I would suggest that five 32 GB cards should be enough for a month-long field trip with one person doing eight hours of recording sessions every day (which would make for a rather intensive type of field trip).

(d) Card reader and/or cable for transferring the data

Ideally your equipment should allow you different options for transferring the data. The main way to transfer the data from the recorder is by copying directly from the memory card. If your laptop has a built-in card reader you should just take the memory card out of the recorder and insert it into your laptop. If your laptop does not have a card reader you should buy an external card reader. When buying it, check that it supports the same memory card type as your recorder does.

Another option is to transfer the data from the recorder via a cable. In this case the memory card stays in the recorder and the cable connects the recorder and the laptop. If a cable was not supplied together with the recorder, buy it separately and check whether the data can be transferred with it (it is important to test it out before the field trip starts).

Neither a card reader nor a cable are completely reliable devices: they can malfunction so it is important to have more than one method for transferring data.

(e) Microphone windscreen

If you are recording outdoors without a windscreen, even a light breeze will cause a lot of noise in the recording (see about wind in Section 3.3.1). It is therefore necessary to have a windscreen (also called a “windshield” or informally “a dead cat”), which is a special protective cover for the microphone that reduces the noise from the wind (see Figure 3.14). Windscreens come in different shapes and materials and have different levels of protection. A windscreen usually comes with the microphone. However, sometimes the recording conditions in the field require a particular level of protection that a regular windscreen cannot provide. In this case you should buy an appropriate windscreen separately.



Figure 3.14. Various types of windscreen

3.3. Signal and noise

The audio recording equipment records various sounds, which include (a) the signal (the voice of the native speaker(s) and the linguist), (b) noise (sounds that are not useful for linguistic research).

The main characteristic of a recording is the signal to noise ratio, i.e. the intensity of the signal divided by the intensity of the noise. The higher this ratio the better the quality of the recording. Thus, you can increase the quality of your recording by making the signal louder and the noise quieter. Increasing the recording volume of the recorder will not help you much as both the signal and noise will be louder.

The level of noise depends on various factors. Some of them correlate with the equipment you are using, including the media you are recording onto, the recorder and the microphone. Figure 3.15 shows the soundwaves of recordings made with five different sets of equipment:

- (a) Wax roll (no data about the microphone)
- (b) Tape recorder, built-in microphone
- (c) Tape recorder, external microphone (dynamic)
- (d) Mini-disk recorder, external microphone (dynamic)
- (e) Digital recorder, external microphone (condenser)

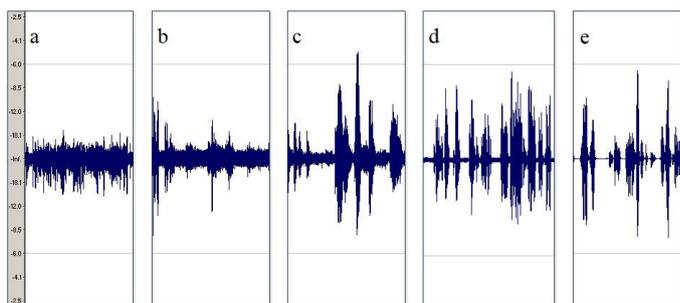


Figure 3.15. The signal and noise on the recordings made with different equipment

A very important thing that one should keep in mind is the correlation between the distance and the intensity of the sound. While everyone understands that the closer you are to the source of a sound, the louder the sound is, not everyone is aware that the intensity of the sound changes in inverse proportion to the square of the distance. Figure 3.16¹⁶ shows that if you double the distance from the source of the sound, the intensity of sound will decrease fourfold. If you triple the distance, the intensity of the sound decreases ninefold.

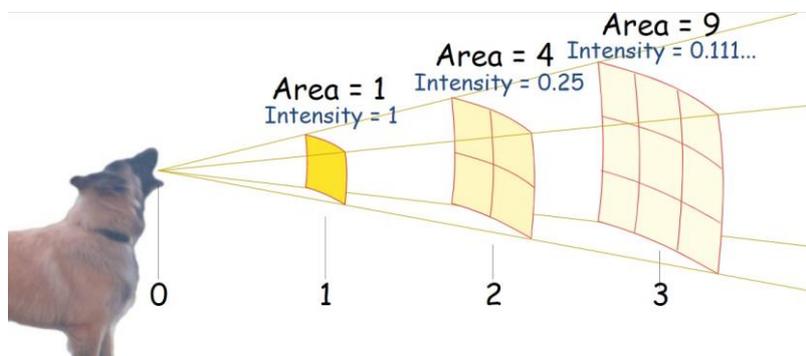


Figure 3.16. Proportion between the distance and the intensity of sound

This principle highlights the importance of placing the microphone closer to the source of the signal and further from the source of noise (however, it should not be too close, see Section 3.3.2). This increases the signal to noise ratio and, thus, the quality of the recording.

Another way to increase this ratio is to reduce the noise. In fact, there is no general “noise”: there are lots of different noises. It is important to identify these noises as every particular kind of noise needs a specific method to be eliminated. A field linguist should therefore be an expert in the “study of noises”.

3.3.1. Types of noises

There are several features that distinguish noises. The most important feature is audibility. Most noises are audible, that is, you can hear them with your ears. However, it does not mean that you will definitely hear them: very often our brain processes audio waves in such a way that we filter out many useless noises. Nevertheless, these noises will be very noticeable on the audio recording. Another type of noise is one which you cannot hear with your ears but which will be picked up by the recording device and will therefore be audible on the recording.

It is also worth distinguishing between background and episodic noises. Background noises are permanently present, and it is easier to identify them before the recording starts. Episodic noises appear for short periods of time and may come as an unpleasant surprise. In fact, the border between these two types of noises is rather vague: sometimes the same noise can be permanent (i.e. background) in one situation and episodic in another. And of course, noises can be further distinguished by how easy it is to eliminate them.

I will discuss the most typical noises that a researcher may face in the field, and give some basic ideas about how each of them can be eliminated. I group these noises into three main categories: (a) inaudible noises, (b) background audible noises, and (c) episodic audible noises.

(a) Inaudible noises

1. Computer – electric power

Many electrical devices including computers produce electromagnetic interference than may

¹⁶ This image is taken from: Pierce, Rod. 2021. ‘Sound Waves’, Math Is Fun, Available at: <<http://www.mathsisfun.com/physics/waves-sound.html>>. [Accessed 22 Apr 2021].

be picked up by an audio recorder. Sometimes a computer produces this noise when it is plugged into the power supply network. This does not happen very often but, when it does, the background noise is rather strong and it significantly decreases the quality of the recording. I suspect that this depends to a large extent on the electrical circuit (e.g. in private rural houses, the network may be outdated and the possibility of such noise may be higher), although I cannot be certain about this. The best solution is not to plug your laptop into the electrical network but to use an autonomous power supply. However, in general it is not recommended to use computers during the audio recording.

In case you have no choice but to use your computer, I recommend doing a test recording: if there is no background noise then everything is OK. It may depend on how close the recorder is to the computer, so in general it is better to place them as far as possible from each other. In fact, it is not only computers that produce such noises, so it is best not to place a recorder close to any electric device that is connected to the power supply network.

2. Mobile phone – connecting to the network

Mobile phones are a real problem for audio recordings. They connect to the cellular network through high-frequency radio waves. Our ears do not hear the radio waves, but they are picked up on audio recordings. If the researcher does not monitor the process of audio recording by listening to it through headphones, he/she will not notice this noise during the session and will discover it only later when listening to the recording. This noise is very strong (see Figure 3.17). Mobile phones connect to the cellular network during a call (they start some time before you hear the phone ringing and maintain the connection until the end of the call), while sending or receiving an SMS, and sometimes without any obvious reason. The best solution to this problem is to switch off all mobile phones in the room. If for some reason you cannot ask the native speaker to switch off their phone, you can ask him/her to place it further from the recorder (i.e. on the other side of the room). And of course, it is very important to monitor the recording: in this case you will detect this noise as soon as it starts. It is important to know that the silent mode of a phone will not solve this problem, but the flight mode will.

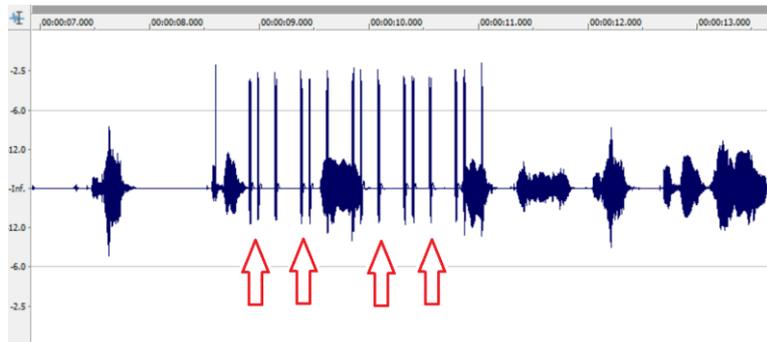


Figure 3.17. Noises produced by a mobile phone communicating with the cellular network

3. Wind

It is always preferable to make an audio recording inside a building but sometimes you have to record outside. The main problem with recording outside is the wind. We can hear the sound of the wind when it is very strong but microphones are much more sensitive to wind than our ears, so even a light breeze can make a considerable noise and ruin your recording. The noise of the wind can be very strong (see Figure 3.18), sometimes completely obscuring the voice of the native speaker.

Even if you use a windscreen (see Section 3.2.3), it is better to put the microphone to a place maximally inaccessible to the wind (in particular, it is recommended to stand or sit so that your body partially covers the microphone from the wind).

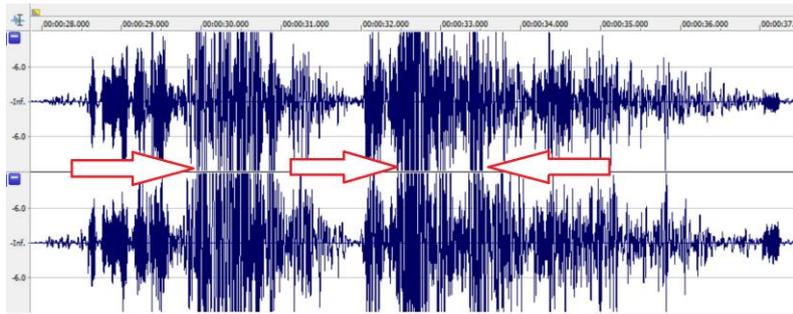


Figure 3.18. Noises produced by the wind

4. Breathing

When a microphone is placed too close to a speaker's mouth, it may begin to pick up the noise of the speaker breathing. In this case, his/her breathing causes the same problem as the wind does. However, it is easy to solve this problem: the microphone should be placed slightly further away from the speaker. Usually a 20-centimetre distance is enough to eliminate this problem.

Apart from regular breathing, noise is more often caused by the outward breath while pronouncing plosive consonants, primarily bilabial plosives. You may use a special pop filter, which serves to reduce or eliminate the popping sounds associated with the recording of plosives when the microphone is close to the speaker.

Figure 3.19 illustrates such a situation.

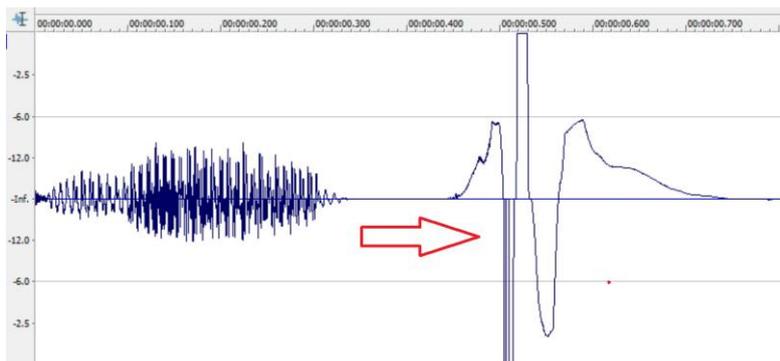


Figure 3.19. The plosive [p] – the effect of the microphone being too close to the speaker

5. Touching microphones and cables

Solid objects are often better conductors of sounds than the air. Even a gentle touch on a microphone or a microphone cable can produce noises that the researcher cannot hear if he/she does not monitor the recording process. Much depends on a particular microphone: some of them (and especially their cables) are especially sensitive to touching. Although this noise is rarely louder than the recorded speech it is still very irritating.

There are several recommendations on how to avoid this type of noise. First, try not to touch the microphone or its cable. If you do not have a tripod and instead have to hold the microphone, use a special handle so as to avoid touching the body of the microphone. Second, it is better to avoid using a microphone if you become aware that it is particularly prone to picking up noise every time the cable is touched or moved even very slightly. Third, do not place a microphone within the space which the native speaker usually uses for gesticulation.

(b) Background noises (audible)

The audible background noises are more diverse.

1. Acoustic (echoes/resonance)

Every room has specific acoustic characteristics that influence the quality of the recording.

The most problematic are rooms with an echo where sound waves are reflected from the walls back to the recording device. As a result, the voice of the native speaker is distorted. There are three main features that affect the acoustic characteristics of a room:

- size: smaller rooms are usually better than large rooms;
- layout: a room filled up with various things including furniture is better than an empty room in which sound may be reflected, unimpeded, off smooth bare walls;
- material of walls: wooden walls, or walls covered with thick wallpaper will absorb some of the sound and are therefore better than hard stone walls or painted walls, which will more readily create echoes.

The room with the best acoustics I encountered during my fieldwork was a sauna. One speaker of the Kukkuzi variety¹⁷ had lost his house in the fire and lived in a sauna. It was a small narrow room with log walls where it was impossible to stand up straight and two adults could barely fit in sitting down, but there were no noises or reverberation at all.

An opposite example are rooms in a standard school building. A typical classroom is large, it has painted concrete walls, and there are only several bookshelves and/or posters in it. Every word pronounced loudly creates a strong echo. The quality of recordings made in such room is very bad and is not suitable for phonetic analysis.

What can a field linguist do? First of all, it is better to avoid rooms with bad acoustics. It is recommended to make a short sample recording before the session and listen to it. If the sound on this recording is distorted, it is likely that this room is unsuitable. However, if the field linguist has no choice, the following actions can be taken to improve the acoustics.

- a. In order to avoid the microphone being directed towards a bare wall, which may result in an echoey recording, try to position the native speaker so that there is no smooth bare wall behind him/her.
- b. Try to cover the walls with some soft materials (e.g. blankets). At the very least try to cover the area of wall directly behind the native speaker. A blanket, a fur coat or some other clothes might be useful.

2. Radio/TV

Many people keep the radio or TV set permanently switched on. It is impossible to make a good recording in such a situation. If no one is watching TV, it is absolutely ethical to ask the native speaker to switch it off or to mute it because it affects the recording quality. A more complicated situation is when a family member is watching or listening to the TV or radio. In this case, you can usually ask him/her to reduce the volume. In this case you need to organize the working place in another room, to close the door firmly and to place the microphone so that the sounds from the noisy room do not fall into the most sensitive zone of the microphone.

3. Refrigerators, fans, air conditioners, electricity meters, and so on.

In this class of noises, refrigerators are the most problematic. First, they can be extremely loud, especially the outdated models which you often find in rural areas. Second, their motor does not work permanently so while you may not hear it in the beginning, it may suddenly start generating noise in the middle of the session, affecting the quality of your recording. The arrow in Figure 3.20 indicates the moment when the fridge switched on. It can clearly be seen that to the right of the arrow the background noise is several times louder than it was before.

The most effective solution is to ask the homeowner if it is possible to unplug the fridge for a short period: one or two hours of being switched off would not cause the food inside to spoil. If the fridge was unplugged, do not forget to plug it back in after the session! However, in some situations this is not a viable solution, and some devices (e.g. electricity meters) cannot be unplugged. All you can do in this case is to place the microphone further from the

¹⁷ A mixed Votic-Ingrian variety spoken in only one village: Kukkuzi.

device and check that the microphone is not directed towards this place (for this reason it is important to know the directionality of your microphone).

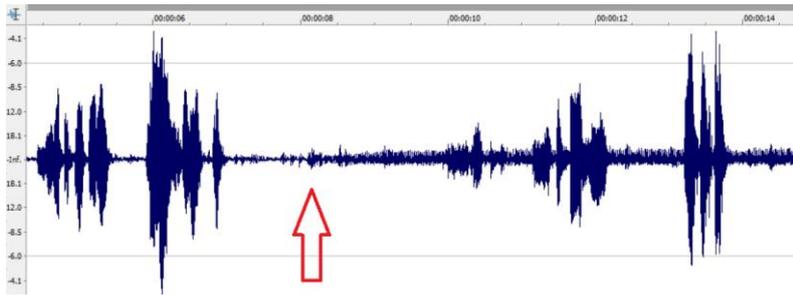


Figure 3.20. Background noise at the moment a fridge starts generating noise

4. Ticking clock

Usually we do not notice a ticking clock as our brain filters out this steady and not very loud noise. However, it is very noticeable in recordings, and it is better to avoid it. Table clocks are a problem that can be easily solved, as it is possible to move the clock to a distant corner of the room or, even better, to another room. Putting the clock under a pillow or blanket can also help. More problematic is a wall clock that cannot be moved. In this case, the microphone should be directed so that the clock is in its least sensitive zone.

5. Buzzing insects

In the summertime, a rural area is usually crowded with various insects. Some of them can be very noisy. This is another reason why recording indoors is preferred to outdoors. However, even inside a building there can be noisy flies, wasps and other insects. It is better to get rid of them before beginning the recording. If they are concentrated in one place (usually by the window), the researcher should not direct the microphone towards this area.

6. Running water (river, sea, sewerage)

The sound of running water is generally louder than we think. Usually the source of such noise cannot be eliminated so the researcher should regularly monitor the recording. Place the microphone closer to the native speaker, avoid directing it towards the source of noise, and close the windows.

7. Lawnmowers, saws, tractors

Some mechanical devices working near the place where the recording session is taking place can make significant noise. The most typical culprits are lawnmowers (especially with a combustion engine), mechanical saws, and tractors.

If it is possible to ask the working person to take a break while the recording session is ongoing, this is the best solution. Unfortunately, in most cases this is not possible, so the only alternative is to move to the most distant room, close all windows firmly and point the microphone in the least noisy direction.

8. Children (and grown-ups)

It is extremely difficult to make a good recording in a crowded place. In such environments, it is best to have a shotgun microphone, which can pick up the voice of a particular person. However, even if you work in a private house, the members of the family often do not understand that their voices can affect the recording. If possible, you should explain politely that a recording session requires a quiet place. If you work in a team, one of the team members can take the children to another room or outside to communicate with them and satisfy their curiosity.

9. Rain

Heavy rain can make a loud background noise. In Figure 3.21 it is noticeable that the recording to the right of the arrow has a noise sometimes half as loud as the voice of the native speaker. (Unfortunately, I do not know how to eliminate the rain! If you know some incantation against the rain you can probably use it, but be careful – when the weather is good native speakers often prefer agricultural works to working with a linguist!). Since it is not possible to eliminate this noise, the best option may be to wait until the rain ceases or dies down, or to rearrange the session with the speaker, but if there is no alternative then place the microphone closer to the native speaker to make the signal stronger (but be careful to avoid over-recording).

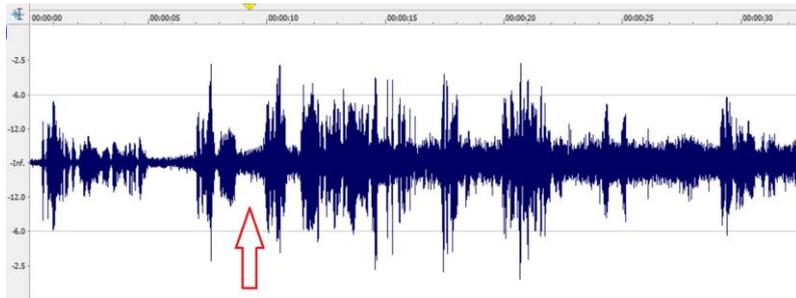


Figure 3.21. Soundwave illustrating the impact of heavy rain on a recording

10. Computer fan

A computer fan can be rather loud when it works intensively, which usually happens when the computer is overworked. Much depends on your computer model and its age. The most reliable way to eliminate this noise is to avoid using a computer during a fieldwork session. If you must use it, then place the recorder as far from the computer as possible and run only the programs that you need during the session (first of all, do not use an internet browser – internet browsers increase the load on the processor significantly and the fan will work harder to prevent overheating).

(c) Episodic noises (audible)

1. Tapping on the table

Some people tap on the table while speaking. As solid surfaces transfer sound waves, this tapping can appear much louder on a recording than it might seem during the fieldwork session. The effect of such noise can be reduced if you have an appropriate stand for the microphone and put a soft material under the stand. You can also explain to the native speaker that the microphone is sensitive to such noise and ask him/her to avoid tapping.

2. Shuffling/clinking objects (held by the speaker or the interviewer)

One of the typical habits of people is to fidget with some small object (a piece of paper, a pen, a newspaper, a candy wrapper, etc.) during a conversation (especially while telling a story). It creates a noise which is usually loud on the recording because the source of this noise is right in front of the microphone.

First of all, the researcher should train himself/herself not to have something noisy in his/her hands. Before the session, the researcher should identify the potentially problematic objects and move them away from the native speaker. It is worth explaining to the native speaker that touching noisy objects is bad for the recordings. If it is possible to interrupt a recording session without negatively affecting the content, the researcher can ask the native speaker to put a noisy object aside.

Figure 3.22 is a freeze-frame from a video (<https://www.youtube.com/watch?v=RJYjrjN-Ong>) in which a Karelian woman took a newspaper during the conversation and started to crumple it.



Figure 3.22. A Karelian speaker fidgets with a newspaper during an interview

3. Creaking furniture and doors

Old chairs and unlubricated door hinges often make loud and unpleasant sounds. Figure 3.23 shows that the sound of a creaky chair can be as loud as the voice of the native speaker. It is recommended to avoid opening a creaky door while recording and to replace a creaky chair with another one.

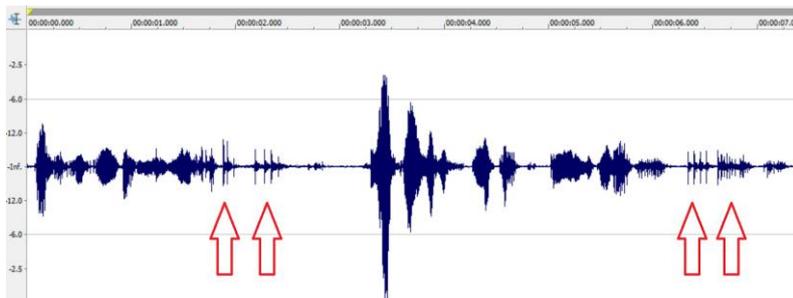


Figure 3.23. The sound made by a creaking chair

4. People/animals entering the room

People or animals entering the room where the recording is taking place usually make noise which will have a negative impact on the recording. It is worth taking preliminary precautions: explain to the other members of the family that there is an audio recording session ongoing, isolate pets in a separate room, etc.

5. Backchannel from the interviewer

This problem was discussed in Section 2.2.1. The researcher should train himself/herself to avoid making unnecessary sounds (e.g. humming sounds) during recording of spontaneous speech. It is also very important to wait until the native speaker finishes a story or a sentence, because often the researcher's response intersects with the final words of the native speaker, and this section of the recording becomes unintelligible and cannot be correctly transcribed or used as an audio sample.

6. Passing cars

If the place where you are recording is located near a road with heavy traffic, the noise of passing cars inevitably affects the recordings (Figure 3.24). In this case it is recommended:

- to find a place which is as far away as possible from the road and/or isolated from the noises;
- to close windows;
- to direct the microphone away from the road.

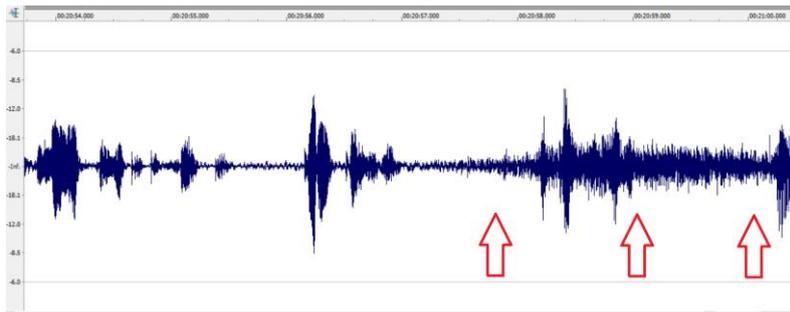


Figure 3.24. The sound made by a passing car

7. Keyboard tapping

It is not recommended to use a computer during the recording session but if you must use it, you should avoid typing. Some people do not think about this noise while typing and press the keys in a harsh manner.

Several things can be done to reduce this noise:

- place the microphone as far as possible from the computer;
- try to press the keys softly;
- wait until the native speaker finishes speaking before typing.

3.3.2. How to mount a microphone?

Basing on everything that was discussed in this chapter one can formulate principles about how a microphone should be mounted.

1. Define the optimal distance for a microphone and place it accordingly. A microphone should not be too close to the mouth of a speaker, otherwise it will pick up his/her breathing and bursts of plosive sounds. However, the closer the microphone is to the speaker, the better the signal to noise ratio. For many microphones the optimal distance is about 30 cm.
2. Do not direct the microphone towards any sources of noise (clocks, window, etc.).
3. Do not direct the microphone towards a smooth bare wall or any surfaces that might reflect the sound.
4. Use an appropriate microphone stand.
5. Avoid holding the microphone.
6. If you are working with more than one speaker, try to direct the microphone so that all speakers will be in the sensitive zone. If you use a stereo cardioid microphone it is good to direct it between the two speakers: in this case each channel will record a speaker from the corresponding side.

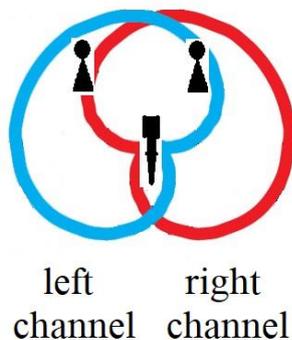


Figure 3.25. Recording a dialogue with a stereo cardioid microphone

7. The researcher does not need to be within the sensitive zone: it is OK for his/her voice to sound slightly quieter on the recording than the voice of the native speaker(s).
8. Try to put the microphone stand on something soft to isolate it from solid surfaces that can transfer noises.

In general, it is important to study the sensitive zones of your microphone in advance. Doing so will help you to use it in an optimal way and to invent some tricks which may be useful for particular situations. For example, some of the native speakers I worked with were very elderly with hearing impairments, and so it was necessary to speak with a very raised voice in order for them to hear my questions. Listening to a recording where the voice of the researcher is several times louder than the voice of the native speaker is not ideal, so I came up with the following solution: I directed the microphone at the native speaker as usual but instead of sitting behind the microphone, I sat to the side of it (see Figure 3.26). The channel which recorded the opposite side picked up my voice only weakly. When processing the audio file, I removed the channel (it was the left channel if I was sitting as shown in Figure 3.26) which had recorded my voice loudly, and retained only the other channel. On the resulting recording, both my voice and the native speaker's were of a similar intensity.

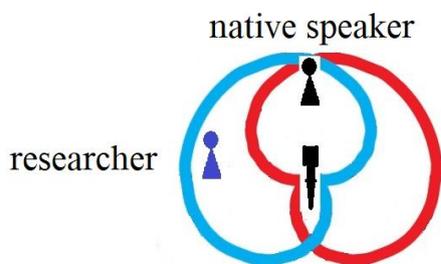


Figure 3.26. Reducing the voice of the researcher via stereo microphone

3.4. Recording session

The workflow of an audio recording session consists of several stages:

- preparations that should be made in advance;
- preparations that should be made immediately before the recording session;
- activities during the recording session;
- operations to be done immediately after the recording session;
- operations to be done on returning to your accommodation after the recording session.

3.4.1. Preparations that should be made in advance

If you have never used your equipment before you need to test it accurately. Make a test recording and play around with:

- the distance;
- the direction of the microphone;
- intensity of the sound;
- input level.

Before you leave your accommodation, prepare everything in advance:

- check whether the batteries for the recorder are fully charged or, if you do not use rechargeable batteries, put a new set of batteries into the recorder;
- if you are not sure that the battery in the microphone is in good condition, replace it;
- check your memory card: it should have enough free space for your session;
- prepare all your equipment – this may include: a recorder with batteries and a memory card;

a microphone with a battery; spare batteries for the recorder; a spare battery for the microphone; a microphone stand/tripod; a spare memory card; adapters (if necessary); headphones; microphone windscreen; possibly a spare recorder and a spare microphone;

- pack everything (if you are going on foot it is better to use a waterproof bag);
- check whether you prepared everything for the session (in particular, it is a good idea to print any questions you want to ask to avoid turning on your laptop in the middle of the session).

3.4.2. Preparations that should be made immediately before the recording session

The first thing that should be done before the recording session is asking the speaker(s) if they consent to being recorded. Depending on the particular situation, consent may be given on paper (by signing a consent form) or verbally (in which case it is worth recording the consent), see Section 7.2. Even if you are working with a native speaker who is already accustomed to you and your usual workflow, it is good to articulate some explicit statement on this point, for example: “I will record our session as usual”.

After consent has been given, eliminate potential sources of noises:

- switch off your mobile phone or turn on the flight mode;
- check that there are no rustling objects near you or the native speaker that might be touched during the session;
- check the surroundings and eliminate potential noises, in particular, put ticking clocks into another room, unplug the fridge, switch off the radio and TV set, try to eliminate buzzing insects, close windows if necessary, notify people nearby that there will be a recording session, etc.

Then prepare your equipment:

- connect the microphone and the recorder;
- check that all unnecessary functions of the recorder (noise reduction, a limiter or filter, etc.) are switched off. On some recorders you can switch on such functions by accident, so it is better to check these immediately before the recording session;
- switch on the microphone;
- switch on the recorder;
- check the input level. If the level is unexpectedly low or unexpectedly high check whether the option “microphone gain” is properly set on the recorder – many recorders have an option that allows you to increase the amplitude of a microphone signal, which may be necessary if a speaker is talking rather quietly, for example (since moving the microphone closer to the speaker's mouth may not be possible or even desirable), and you should experimentally decide which mode is more appropriate to your recording environment.

Prepare other things that you will need during the recording session (e.g. paper, a pen, etc.).

3.4.3. Activities during the recording session

When you start the recording, the first things to be recorded are:

- the consent of the native speaker to the recording session (if it was not recorded earlier);
- basic metadata: where and when the recording is taking place and who the native speaker is.

I personally never record the metadata on the audio recordings, but I never break the rule that the first things to be done on returning to my accommodation are: (a) proper naming of the recorded files, (b) filling in the metadata files. However, many researchers find it difficult to be entirely consistent in following this rule and so I would still recommend recording the basic metadata directly to the audio file (of course, it should not be the only place where the metadata are recorded: you should write them down separately too).

In the process of recording it is very important to monitor the recording, that is, you should listen to the recording through headphones connected to the recorder, as this will allow you to immediately pick up on any problems with the recording and gives you the opportunity to identify the sources of inaudible noises and eliminate them.

During the recording, the researcher should also monitor the following things:

1. Input level. Good recorders have indicators that show the input level of the sound. The ideal situation is when indicator bars move between -12 and -6 dB. If they exceed -6 dB, there is a possibility of over-recording. If the indicators do not exceed -24 dB, the recording will be too quiet and the signal to noise may be too low. Some recorders have a special indicator of over-recording (labelled “Peak”, “Over”, etc.), which blinks when over-recording takes place. In this case you should decrease the input level.
2. Level of batteries. Every recorder has a battery level indicator (see Figure 3.27; Zoom and Tascam has this indicator in the upper right corner of the screen, Roland in the lower right corner, and Marantz in the lower left corner). It is important to monitor it and to replace batteries when needed. I do not recommend waiting until the batteries are completely discharged: some recorders will lose the current file if the recording stops because of empty batteries. It is better to check in advance how your recorder informs you that the batteries are about to run out and how much time you have before the recording stops.
3. Free space on the memory card. A recorder can display the time you have until the memory card is full (as numbers and/or as a status bar). I recommend making sure that you have enough free space on your memory card before the recording session starts.



Figure 3.27. The front panel of different voice recorders (Zoom, Roland, Tascam, and Marantz)

Every recorder displays the time elapsed since the beginning of your recording. You can see this number on the display of the recorder (see Figure 3.27 – for Marantz you need to press the button “Display” to get this information). It is important to monitor that these numbers are changing. One of the most typical mistakes made during a recording is when the pause button is pressed but the researcher thinks that the recording is in progress because the input level indicators are moving and the sound is heard through the headphones. Though usually the indicator of the recording looks different in the recording and the pause modes (e.g. the recording button may blink repeatedly when in the pause mode), it can be easily overlooked. The changing numbers are reliable evidence that the pause button is not pressed and the recording is in progress.

3.4.4. Operations to be done immediately after the recording session

When the recording session is finished, the following operations should be done:

- check if you have enough resources for the next working session if you are not going

directly to your accommodation and make the necessary preparations (replace the battery or the memory card, etc.);

- turn off the recorder and if it has a lock that blocks accidental pressing of buttons, use it;
- turn off the microphone;
- disconnect the microphone from the recorder;
- pack away the equipment carefully;
- check that you are not leaving any piece of equipment.

3.4.5. Operations to be done on returning to your accommodation after the recording session

On returning to your accommodation, do not forget to do the following things:

- transfer all audio files to your computer;
- rename the files in a consistent way, see Section 5.3.1;
- provide each file with the required metadata, see Section 5.6;
- listen to the recording (if not completely then at least in several places: e.g. the beginning, the end, and the middle): if the quality is not perfect, work out why not so as to avoid repeating your mistakes next time;
- make backup copies of all files;
- prepare the equipment for your next session: free up enough space on the memory card, charge batteries, check that the recorder and microphone are turned off and not draining battery power.

Chapter 4. Video recording

- 4.1. Why video recording?
 - 4.1.1. Advantages of video recording
 - 4.1.2. Challenges of video recording and how to avoid them
- 4.2. How to choose a camera?
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 - 4.3.3. Extra memory cards
 - 4.3.4. Case
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- 4.4. Specific features of video documentation and typical mistakes
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- 4.5. How to make a recording
- 4.6. Processing the video data
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 - 4.6.2. Choosing a format
 - 4.6.3. Combining audio and video tracks
 - 4.6.4. Other operations

4.1. Why video recording?

Video recording is a much more complicated process than audio recording, so the experience acquired during audio sessions cannot be automatically transferred over to video sessions. There are both pros and cons of video recording, and it is important to be aware of them in advance. I will briefly list the main reasons why video recording is so important and valuable¹⁸.

4.1.1. Advantages of video recording

a. Video allows you to record not only audible speech but also the speaker's gestures. Traditionally, linguistics has either completely ignored gestures or considered them to be peripheral to language. Interest in this topic has been increasing in the last few decades and there is no doubt that it will continue to grow (see, for example, Seyfeddinipur & Gullberg 2014).

People make various gestures while speaking, and these gestures are an essential part of their speech. Gestures are diverse. For instance, McNeill (1992) distinguishes four types of gestures basing on their relation with speech. Iconic gestures depict some concrete entity through their resemblance to it. Metaphoric gestures depict some abstract entity. Deictic

¹⁸ I am extremely grateful to Mandana Seyfeddinipur who introduced me to the concept of video recording. A significant part of this chapter is based on her lectures and publications. A lot of valuable information on video recording can be found in Seyfeddinipur & Rau (2020).

gestures point to the location of a referent. Beat gestures reflect the rhythmic structure of speech (for a broader discussion of gestures see McNeill 2000). Figures 4.1–4.3 are freeze-frames of a video recording made during a field session with an Ingrian native speaker. In Figure 4.1, the native speaker describes the process of fishing with a seine and shows how it is pulled. In Figure 4.2, the speaker answers a clarifying question about the location of some event: “No, not here. There, in Estonia”. In Figure 4.3, she speaks about someone who does not understand the interest in minority languages; the gesture expresses the native speaker’s opinion on the matter.



Figure 4.1. Ingrian native speaker shows how a seine is pulled



Figure 4.2. Ingrian speaker says: “There, in Estonia”

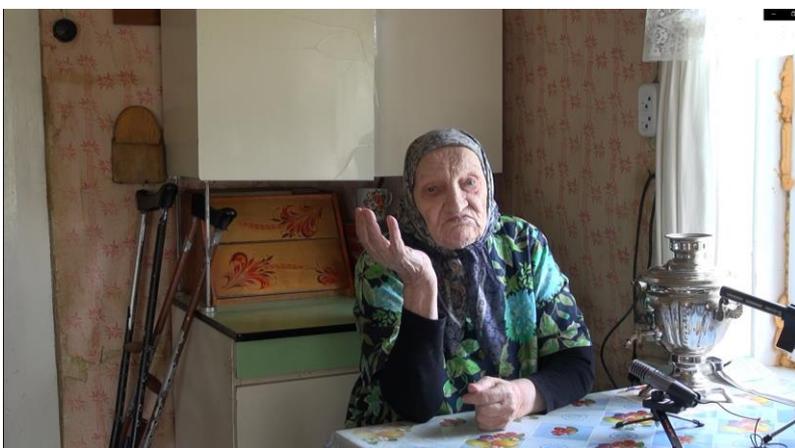


Figure 4.3. Ingrian speaker expresses her attitude to the situation

Very often gestures convey information that is absent from verbal communication. As a result, it may be difficult to understand some passages of speech without a video recording. A typical example is when you are asking a speaker about the size or a shape of an object and his/her answer contains a gesture. For example:

Linguist: Is it a big basket?

Speaker: No, it is not big, it is this size <a gesture follows> or even smaller.

It is evident that without a video recording a significant part of the message is lost.¹⁹

A detailed discussion of gestures in the context of linguistic documentation can be found in Seyfeddinipur (2012).

b. Video recording captures the context of a recording session

The context of your working session may be important from an ethnographic, anthropological and linguistic point of view. If you only have notes made by hand or an audio recording, can you answer the following questions: “What clothes were the native speakers wearing?”, “What do their housewares look like?”. This information is important not only from an anthropological and cultural point of view: a linguist may need it when preparing definitions of words for a dictionary. Many culture-specific objects and processes are very difficult to imagine if you have never seen them. There are lots of situations when a video recording can be useful, such as when a native speaker tells you the names of different plants or fish, when you study the parts of a spinning wheel, etc. Of course, in many cases the lack of a video recording can be partially compensated for by pictures, but this is a less reliable method because it is more difficult to mark correspondences between an audio recording or notes and the pictures.

c. Transcribing of texts

In the course of communication, we perceive speech in a multimodal way, and the recognition of speech during communication is also multimodal. In addition to the sound that we hear, we watch the articulation of the speaker, and it helps us to interpret the speech. I think that everyone who has had the experience of speaking by telephone in a language that they are not fluent in will have noticed that it is more challenging than speaking face-to-face.

A well-known phenomenon is the McGurk effect described in McGurk & MacDonald (1976). This research illustrated that the perception of sounds depends very much on the visual component. The authors showed that, when certain sounds were accompanied by a video recording of someone producing a different sound, the perception of the sound changed and a person would instead ‘hear’ this other sound.

My colleague Prof. Olga V. Fedorova from Lomonosov Moscow State University told me that she once compared the time spent by a speaker to transcribe the same dialogue under two different conditions: (a) when a video recording with sound was played and (b) when only the audio recording was played. The result was very definite: video recording provides for a faster and more precise transcription of speech.

d. Gestures can be used as a substitute for speech

In face-to-face communication not all messages are vocalised. For example, it is typical for a speaker to nod, rather than uttering the word “yes”. There can also be special culture-specific gestures that form an important part of communication. For example, speakers of Hebrew use a hand gesture, as illustrated in Figure 4.4, to say *rega!* ‘wait!’ (lit. ‘moment’) when they want someone else to stop speaking to give him/her the floor (this gesture is not limited to regular conversation but can also be used in other situations when asking someone to wait). Of course, this part of communication cannot be properly documented without a video recording.

¹⁹ If such a situation occurs in a session without a video recording, I usually do the following thing to prevent the loss of meaning: I describe the size myself, e.g. I say: “It’s really not big, about 30 centimetres in diameter”.



Figure 4.4. Hebrew gesture *rega!* ‘wait!’

e. Video is useful for public relations

Systematic field work usually benefits from being advertised in the academic community and beyond. A memorable paper at a conference or an attractive web page can play a positive role in further development of a documentation and description project. A video recording is one of the best ways to present lively and exciting materials.

f. Video is useful for the language community

In work with endangered languages, it is not uncommon for a language consultant to die, leaving a handful of photos as the only artefacts that can remind us about him/her. In this case, a video recording given to the relatives by the researcher may be the best possible gift.

As I have shown in this section, it is clear that a video recording of your fieldwork session gives you many additional advantages. However, making video recordings of fieldwork sessions is not yet standard practice. At the beginning of 2021, I carried out a simple survey among my colleagues who are experienced field linguists. I asked them to choose one of the four possible options, which characterize their fieldwork:

(1) I usually make audio recordings but I do not have any experience with video recordings;

(2) I usually make audio recordings but sometimes I also make video recordings;

(3) I usually make video recordings;

(4) I do not make any audio or video recordings.

None of my colleagues answered that he/she does not make any recordings (though it does not mean that there are no such linguists at all – I know such people). Of the 23 persons who answered this survey, five do not have any experience of video recording, 16 make video recordings from time to time, and only two make them most of the time. This illustrates that audio recording is undoubtedly the standard in contemporary field linguistics, while video recording is becoming more popular but is not yet standard practice.

4.1.2. Challenges of video recording and how to avoid them

So, what are the reasons that make video recording problematic? In fact, there are quite a few of them. I will list these reasons but also try to suggest the simplest solutions to these potential problems.

(a) Price of the equipment

A good semi-professional video camera costs approximately 2000 euros. Of course, it is much more expensive than a good audio recorder and not many researchers, especially younger ones, are able to pay for one from his/her own money. However, there are several potential solutions to this problem. First, it is worth finding out whether your university has some equipment that can be borrowed for your fieldwork. Second, there are many cheaper cameras that can make relatively good video recordings. The difference between advanced and cheaper cameras is more noticeable in complex recording conditions but in good conditions there is

much less of a difference. One of the main issues, which is crucial for the field linguist, is the quality of the recorded sound, but this can be solved if you make a separate audio recording simultaneously with the video recording. Third, contemporary photographic cameras may cost less than video cameras but they usually have a video recording mode. Practicing with cheaper equipment is still more promising for both data collection and the development of your professional skills than an outright rejection of video recording²⁰.

(b) Weight of the camera and equipment

A video camera with a full set of accessories is a rather voluminous and heavy thing, particularly in the case of a tripod. It is not so important when you have your own means of transportation but can be critical if you have to carry it by yourself (especially if you have to walk for many miles every day). Fortunately, the size and weight of modern video cameras have decreased over time. I recommend thinking about the field conditions when choosing a video camera and a tripod. It is also worth purchasing a convenient case in which to carry all your equipment (see section 4.3.4).

(c) Negative reaction from native speakers

A negative reaction from native speakers to audio recording is a relatively rare thing, especially if the researcher explains why the audio recording is needed. The situation is more complicated with video recording.²¹ First, a native speaker may be worried about his/her appearance (primarily inappropriate clothes). Second, video recording is associated with TV broadcasting (the difference between a journalist and a field linguist is not a self-evident thing). Third, a video camera standing on a tripod can look much more intimidating than a small voice recorder lying on a table.

My colleague Denis M. Tokmashev (associate professor from Tomsk Polytechnic University) told me about his observations of the attitudes of native speakers of minor Siberian languages to video recording. He said that speakers living in the taiga, far from the big cities, do not care much about publicity and are not afraid of video recording, while more urbanized speakers often express a negative attitude towards video recordings. One of the speakers with whom he worked refused to be recorded on video saying: "If my grandchildren see me on a TV show, I will die at once!".

This problem is rather serious. In cases when a native speaker objects to being videoed, I recommend just abandoning the idea. It is possible his/her attitude will change later when a trustworthy relationship with the linguist has been established. In other cases, I recommend explaining to the native speakers the goals of video documentation and emphasizing that it has nothing to do with TV broadcasting. If the native speaker gives permission for video recording but is still suspicious, I recommend being especially careful and always asking for separate permission for any publication of this recording. However, this problem concerns particular persons and cannot be considered a global problem of video recording.

(d) Complications in operating equipment

Making a video recording means that you have one more piece of equipment that you must operate. While a voice recorder can be placed right next to the researcher communicating with

²⁰ However, photographic cameras are less adapted to making video recordings. From a practical point of view, this means that the researcher needs to be much more experienced in operating his/her equipment to get a video of sufficient quality with a photographic camera compared to using a video camera which has image stabilization, better depth of field, and good sound recording options.

²¹ However, I have come across deviations from this tendency. For example, one Ingrian speaker with whom I used to work prohibited me from taking a photo of her but did not mind a video recording.

the native speaker, the video camera should be set up in a place which is appropriate for framing the subject. While recording, it is necessary for the researcher to monitor the framing, focus, and input volume, but standing behind the video camera to operate it makes it difficult to communicate with the speaker. The optimal solution is to have a separate person who can operate a video camera while the researcher talks with the native speaker and monitors the audio recording. This person may also be a researcher and during the same session the roles of interviewer and camera operator can be switched. However, since video documentation requires the camera to be set up on a tripod for maximum stability (see section 4.4), it requires less control than other types of video recording and in most cases the same person with some experience can control all three processes: communicating with the native speaker and monitoring the audio and video recording. From my own experience, I can say that the first few times controlling all three processes it was slightly stressful, but later I did not feel any discomfort from it. However, I should emphasize that a necessary precondition for such “multimodal work” is a good command of the equipment (see section 4.4).

(e) Difficulties in processing the data

Video formats are much more complicated than audio formats. It is easy to understand why it is impossible to make a “simple” video format (similar to WAV for audio) which contains a sequence of separate pictures (frames). One HD frame of 1280x720 pixels contains 921,600 pixels. Every pixel needs 3 bytes (one byte for every colour in RGB format), so one frame needs 2,764,800 bytes. Twenty-five frames per second would need 69,120,000 bytes or ~66 MB. Thus, one hour of video recording would have the size ~232 GB, and that is only the video without the audio! For this reason, video formats are much more complicated. They do not save the data associated with each and every frame, but rather they encode the changes that occur from one frame to the next. One of the consequences of this is that a video recording cannot be cut mechanically into pieces.

Additionally, a video file must contain not only the video itself but also the audio to accompany this video, and the video and audio must be synchronized. Thus, a typical video file (e.g. AVI) is a container consisting of different parts. For a field linguist, very much depends on the particular software used for processing the video recordings, and on his/her experience of working with it. Let’s consider a typical action like cutting off several unnecessary seconds at the beginning of a recording. In the case of an audio file, it is likely that the main part of the recording won’t be affected by this operation, and the result won’t depend on the software used. the several seconds will be just cut off. In the case of a video recording, this process is much more complicated. To begin with, the whole video file may be converted into the native format of the particular software being used. Then a cutting operation will be implemented, which is far from trivial because every piece of recording influences the following pieces. Then the native format of the video must be rendered into the required format. Every step in this process can lead to a loss of quality.

However, these problems concern mostly the initial stage of video recording experience. The researcher should spend some time choosing appropriate software and learning to use it. After that, working with video will not feel sophisticated. And the positive feelings after making an interesting video recording will compensate for the initial challenges.

(f) Size of files

Video files are very large, making the storage and backup of video recordings much more challenging than for audio files. However, the solution to this problem is evident: if you will be doing a lot of video recordings it is worth buying two external hard drives (the second one will be used for backup copies).

(g) Safety

A video camera is a valuable thing. It is usually too large to be carried all the time, and often it is left in the house. Thus, there is always the potential for it to be stolen.

I recommend the following precautions:

- do not unnecessarily have your camera on show;
- do not leave it out on open surfaces, but rather put it in the most hidden place;
- do not leave the room where your belongings are unlocked;
- do not keep your recorded data in the same bag as the video camera.

Summing up, I want to stress that none of the challenges discussed can outweigh the important results and positive emotions that a good video recording can bring to the researcher and many other people.

4.2. How to choose a camera?

The video camera market is changing very fast so it is almost useless to give any concrete recommendations, because in two or three years they will be outdated. Every video camera has lots of different characteristics. I divide these characteristics into two groups: (a) those that are very important for a field linguist, (b) those that are not important or are of secondary importance for a field linguist. The following factors are the most important.

(a) Compatibility with an external microphone

A video camera is usually positioned at some distance from the native speaker, so an external shotgun microphone is essential for recording high quality audio. If such a microphone does not come with the camera, it is necessary to buy one. In this case, pay attention to the plugs: the microphone and the camera should have the same type of plugs (see Section 3.2.1 about plugs). As the most recognized type for video recording is a microphone with +48V phantom power, it is best to choose a camera that supports phantom power.

(b) Control of audio input

For linguistic video documentation, sound is no less important than the picture. Check how the control of audio input is organized in the camera. It is not good if the recording level can only be controlled through the menu, especially if it is not a one-step action. As you might need to make a stereo recording, be sure that your camera allows regulating the input level for every channel separately.

(c) Image stabilisation

Any movement of the camera during the recording process will affect the resulting video. This may happen if the camera is held by hand, or if the tripod is knocked, etc. Contemporary video cameras have a special system of image stabilisation which may be either optical or digital. I recommend using cameras with optical stabilization as it significantly improves the quality of the recording.

(d) Weight

As mentioned in Section 4.1.2, the weight of the camera is important if you have to carry it for a long time. Fortunately, there is no direct correlation between the weight and quality of a camera and you can find good video cameras that weight about half a kilogram.

(e) White balance adjustment

Colours in video recordings depend on the light. The same object will look different if your recording is made on a sunny day, or inside a dark room, or during sunset. It is important to have a camera that allows you to set the correct white balance as it will make colours look more natural on your recording. If your camera has this option, you just use a piece of white paper to calibrate your camera.

(f) Lamp

If you are going to make indoor recordings you will probably need extra light. A built-in lamp can be useful if you do not use external lighting.

(g) Battery capacity

A video camera is a more power consuming device than an audio recorder. Usually a video camera has its own battery and the capacity of these batteries limits the recording time. A specific feature of video documentation (when compared with video recordings made by amateurs and even professional journalists) is that it is not “episodic”. Your video camera will be working for many hours and preferably without breaks. Unfortunately, many batteries for video cameras guarantee only 60–90 minutes of recording time (if not less). For this reason, it is important to know in advance how long your camera can work with one battery. In all cases, an extra battery will be necessary (see Section 4.3.2).

It is difficult to say how important the manufacturer of the camera is. On the one hand, recognized manufacturers of video cameras such as Panasonic, Sony, Canon, etc. produce high-quality and reliable video equipment. On the other hand, it is also possible to buy good quality video recorders produced by lesser-known manufacturers, which are often cheaper. Nevertheless, I prefer to use well-known brands as it is easier to get the necessary information about their products. Note that the format of recorded video files is typically dictated by the brand one choose and, from this point of view, the proprietary formats of lesser-known manufacturers may become a serious problem (see 5.2).

Two other characteristics of video cameras which are of little relevance for a field linguist are:

(a) Number of matrixes. The number of matrixes means nothing if you do not know the size of the matrix and the size of the pixels. Of course you can study these parameters in detail but usually they correlate with the price of the camera, so you should increase your budget to get a real gain in picture quality. Thus, do not pay much attention to the number of matrixes.

(b) Digital zoom. It is better not to use digital zoom because it significantly decreases image quality. Thus, this option is useless for video documentation.

4.3. How to choose accessories?

4.3.1. Tripod

A tripod is a very important accessory for video documentation. The main features of a tripod are:

- stability;
- weight;
- height.

A tripod should be stable. The simplest test to check it is the following: put your camera on your tripod (at its maximal height) and push it gently. If your camera vibrates it means that the tripod is not very good. This feature is partly in inverse proportion with the weight. The most stable tripods are usually rather heavy, and it can be a problem if you do not have your own transport and need to walk significant distances on foot. In this case, you should choose a tripod carefully to find the best compromise between stability and weight.

It is recommended to position the camera at the level of the speaker's eyes or slightly higher (see Section 4.4.2). Depending on the circumstances of your typical field session (whether the native speaker usually stands or sits), you can decide how tall the tripod should be.

There are two other things to be checked when choosing a tripod. First, check that your camera is firmly mounted and that it cannot detach from the tripod. Second, check the handles that allow you to move the camera left and right and up and down. All movements should be

very smooth without sudden changes, otherwise any repositioning of the camera will make it vibrate.

Ideally, you should have two different tripods, one to stand on the ground, and another smaller one which can stand on a table or some other furniture.

4.3.2. Extra batteries

As mentioned in Section 4.2, a video camera is a power consuming device and one set of batteries is often not enough for a fieldwork session. For this reason, it is worth buying one or two extra batteries (or sets of batteries). It is also worth checking if there are batteries with extended capacity suitable for your camera.

4.3.3. Extra memory cards

Even if you do not use memory cards to store your recordings, I recommend having a couple of extra cards (and always carry at least one reserve memory card with you). If you decide to use memory cards as additional storage for your recordings, make the necessary calculations and buy the required number of cards.

As video cameras are more sensitive than audio recorders to the speed class of the memory cards, it is worth checking what limitations concerning memory cards are indicated in the instructions. In any case I do not recommend using cards slower than 10 MB/sec (see details, for example, here:

<https://www.sdcard.org/developers/sd-standard-overview/speed-class/>).

4.3.4. Case

It is worth buying a handy case where both the video camera and all accessories (excluding the tripod) can be stored. This case should be waterproof and easy to carry.

4.3.5. Wireless lavalier microphone

The microphone mounted on a video camera cannot be put close to the native speaker, because there should be some distance between the camera and the speaker. In the case of noisy surroundings, this will affect the signal to noise ratio and decrease the quality of the audio recording (see Section 3.3). There are two possible solutions of this problem. First, you can make an audio recording separately (in this case you should later replace the original audio track of the video recording with this other audio recording). Second, you can place the microphone connected to the video camera closer to the native speaker. There are two typical ways to achieve the latter option, one of which is a wireless lavalier microphone. A set of wireless lavalier microphones includes a receiver which is mounted on the video camera and one or more lavalier microphones with transmitters (See Figure 4.5). A lavalier microphone (see Section 3.2.2) is clipped onto clothing close to the mouth of the native speaker and its transmitter sends the sound to the receiver. Signals from different microphones (attached to different speakers) are recorded to different channels. The second way to position the microphone closer to the speaker is by using an extension cable (see Section 4.3.6).



Figure 4.5. A set of lavalier microphones with transmitters and a receiver²²

4.3.6. Extension cable for the microphone

An extension cable for the microphone can avoid the need to buy an extra microphone, as you can use the same microphone which is usually mounted on your video camera. When you need to place this microphone closer to the native speaker, you connect it to the video camera with the extension cable. However, in this case you should have an extra stand for this microphone.²³ I usually use a five-metre-long extension cable.

4.3.7. On-camera light

If you plan to make video recordings in a dark room an extra light can be useful. LED technology has made possible compact lighting systems which can be placed on a separate tripod or directly on your camera. However, contemporary video cameras usually work well indoors without additional illumination, and you will not necessarily need on-camera light even for recording indoors.

4.4. Specific features of video documentation and typical mistakes

4.4.1. Static camera

One of the commonest tips for beginners in videography is to vary your shots, which may involve moving shots, but may also involve transitioning from wide shots to close-ups, to a different angle of the same close-up, and so on. The primary reason for this is to keep the audience engaged in your video. These recommendations do not apply to video documentation, however, which is based on completely different principles. From the point of view of the linguist, the speaker and the process of speaking is the main object of interest, which is always attractive and thrilling. Thus, there is no need to aim the camera at any other object.

The main principle is that the camera should be maximally static. It is normal that during a two-hour session you do not move the camera. The need to move the camera occurs only if the native speaker has changed his/her position or if you want to correct your mistake in framing.

²² This picture is taken from <https://www.amazon.com>.

²³ In Pictures 4.1–4.3 you can see two microphones. The rightmost one is the microphone from a video camera connected through the extension cable and mounted on a small tripod.

4.4.2. How to set up the camera?

The next principle is that you should always use a tripod. The camera should be mounted on the tripod at the same level as native speaker's eyes or slightly higher. Check that the framing is correct before you start recording (see Section 4.4.3).

Of course, there may be some situations when you hold the camera in your hands, for example, when you are walking with a native speaker and he/she is showing you some objects (plants, devices, houses, etc.). However, during a regular working session (such as the recording of stories, or a dialog, or asking questions from a questionnaire), a tripod is needed. You can record a short story of 2–3 minutes in length holding a camera in your hands but it is impossible to hold the camera steady for one or two hours without moving.

Whenever holding the camera, it is important to hold it with both hands and to place your elbows on a solid surface. If you do not have a solid surface for your elbows, tuck them in towards your chest and use diaphragmatic breathing (also called “belly breathing”), which is common for men but not for women.

4.4.3. Framing

The main principle of correctly framing the subject is to avoid close-ups. It is not good to film only the head of the speaker like TV journalists usually do (see Figure 4.6).



Figure 4.6. Example: wrong framing²⁴

Depending on the task at hand, you should decide what parts of the body need to fit in the frame. The contemporary standard of linguistic video documentation recommends having in the frame the upper part of the body including hands. As you cannot predict what gestures the native speaker will make during the recording session, the frame should be big enough to fit the arms outstretched to the sides and raised up. If part of the arm does not fit in the frame, the camera is too close. Figures 4.7 and 4.8 illustrate typical shortcomings that exist in video recordings.²⁵ Figure 4.7 is a screenshot from a recording made with a mobile phone. This frame includes the upper part of the body without the arms. The vertical orientation of the frame exacerbates this problem. Figure 4.8 has an appropriate (horizontal) orientation, but the camera is still too close: neither the right nor left hand of the speaker fits in the frame.

²⁴ This is a screenshot from an interview with a Karelian speaker, see <https://www.youtube.com/watch?v=t7NZZW-oDkQ>.

²⁵ I am very grateful to my students (Fredrick Granheim, Rebeka Kubitsch, Marie Mayer, Silja-Maija Spets, Esther Stocker, Bogáta Timár, Marili Tomingas, and Tobias Weber) who took part in an online workshop on field linguistics in May 2021, and provided illustrations for this chapters (Figures 4.7–4.10). These illustrations are published with the permission of the authors of the video recordings.



Figure 4.7. Example: wrong framing



Figure 4.8. Example: wrong framing

However, there are tasks when the whole body including the feet should be in the frame. For some tasks it is not sufficient to have a recording from one position and a second camera is needed (e.g. the first camera records a frontal view and the second camera records a side view).

If you realize during the recording that the camera is too far from the native speaker you can use the zoom function. While doing so, try to avoid pushing the camera, and do not hurry, as zooming in too fast does not look good on the recording. In general, the less the camera is touched during the recording session, the better the result will be. While it is possible to use the optical zoom, it is strongly recommended to avoid using the digital zoom since it significantly affects the quality of the recording (see Section 4.2).

4.4.4. Focus

Modern video cameras have autofocus. Usually this works well but sometimes it makes mistakes. If you suspect that the autofocus does not work correctly or can lose the focus, it is better to define the frame (e.g. using zoom), then allow the camera to focus on the object, and switch the autofocus off (or just set the focus manually and lock it).

Figure 4.9 illustrates a problem with the focus. The face of the female speaker is out of focus and is blurred. This video recording was made in a narrow room so it was not possible

to position the camera further from the speakers and the distance between each speaker and the camera was different. In this situation, it is better to position the camera so that the distance from the camera to every speaker is the same (or to ask the speakers to change their places).

The lighting in the room also has a bearing on focus, with the wrong focus being more likely in a dark room.



Figure 4.9. Example: wrong focus

4.4.5. Light

It is generally assumed that bright sunny conditions are necessary for a good picture or recording, but this is not the case. First, people may have to squint or even close their eyes in bright sunlight. Second, the recording may be affected by glare from the sun. Figure 4.10 is a screenshot from a recording made in the open air. The face of the speaker on the right of the image is in the shade and is clearly visible, but the face of the speaker on the left of the image is in the sun and is completely washed out.



Figure 4.10. Example: wrong light

Recording outdoors is best done in slightly shady conditions. This prevents glare but does not create any problems with lack of illumination.

Recording indoors can be more complicated if the room is very dark. In this case, an extra light may be needed, which may be a built-in lamp of the camera or an on-camera light (see Sections 4.2 and 4.3.7).

The camera should never be placed directly opposite the light source, otherwise the subject being recorded will be very dark. In a dark room, having the only window behind the speaker will spoil your recording. In this situation, it is better to ask the native speaker to sit

so that the light from the window falls on his/her face, and position the camera so that the window is not in the frame.

4.4.6. Sound

Sound remains the most important part of linguistic documentation and you should not forget about it. While a journalist wants to get a good picture and does not have special requirements for the sound (it is sufficient that the words are understandable), the field linguist requires a high-quality audio recording that can be analysed with phonetic software. There are three possible strategies for recording sound during a video session:

1. The sound is recorded to a separate device (an audio recorder) and then it is combined with the video and the original audio associated with the video file is removed. It is a reliable method but it has several negative sides:

- (a) It is rather time consuming;
- (b) Synchronization of the video and audio tracks requires accuracy;
- (c) For each time the pause button was pressed during the recording, it will be necessary to synchronize the audio and video tracks.

2. The sound is recorded only to the video camera, either using a lavalier microphone or a shotgun microphone (i.e. I do not recommend using the internal stereo microphone of the camera as it will catch all possible noises; see Sections 3.2.2, 4.2, 4.3.5, and 4.3.6 about microphones). A lavalier microphone will result in high quality audio but is not always comfortable for the speaker. If you want to record both the native speaker and the interviewer (or two native speakers), you should have two lavalier microphones whose signals are recorded to different channels (some equipment allows recording more than two channels simultaneously).

When using a shotgun microphone, you can mount it on your video camera but in this case it will be rather far from the native speaker. This may not be a problem in a quiet place but if there are loud external noises this can have a serious impact on the quality of the recording. In this case, an extension cable should be used (see Section 4.3.6).

3. The third option is a combination of the first two whereby you try to make a good recording with your video equipment but at the same time a parallel recording is made with separate audio equipment. After listening to both audio recordings, you can decide which of them sounds better. If the recording made with the audio recorder is better than the one from the video camera, you process it as you would do for the first strategy.

In all three of the above scenarios, it is important to control the input sound level.

4.4.7. Some other tips

- Many cameras have a long-play mode. I do not recommend using it because this mode decreases the quality of the recording.
- Try not to touch the tripod – it can make the camera vibrate.
- Make a trial recording if possible – it allows you to avoid mistakes.
- Never change the orientation of a video camera to shoot in portrait mode. A photo can be easily rotated but a video recording cannot.
- If you are recording a dialogue, it is better to have both speakers in the frame rather than move the camera from one to the other.
- Study your equipment carefully in advance. In the field, you will not have time to investigate your equipment. This principle was already discussed in Section 3.4.1. This is much more important for video recording than it is for audio, as a video camera is more technologically sophisticated than an audio recorder and there are more possibilities to make mistakes.

My first personal experience of video recording is a good illustration of this principle. In Ingrian expeditions that we (Elena Markus and I) organized, the main rule was a total audio recording of all communication with native speakers, but there was no video recording equipment. After participating in a documentation training workshop run by the Endangered Languages Documentation Programme, we decided to start making video recordings. To gain some experience we asked a student participating in the field trip to bring along a video camera that she had at home. Neither we nor the student had any video recording experience. I suggested studying the manual carefully but it appears this advice was not heeded. The first attempts resulted in video recordings which appeared to be very faded, and the best (but still not satisfactory) results were achieved when the native speaker was sitting in the darkest corner of the room. We tried to change the settings of the camera but were unable to improve the situation and so most of the recordings were done in this way. A couple of days before the end of the trip, I examined the camera and noticed a very small mechanical switch that no one had paid attention to before. This switch was in the position “Night Mode”. After switching to the regular position, the quality of the video recordings improved significantly, but we did not have the time to make new recordings with the speakers. This anecdote illustrates the importance of studying your equipment very carefully to avoid all your material suffering in quality (as in our case) or even being lost.

4.5. How to make a recording

I recommend starting a video recording session by asking for permission from the native speaker. It is worth doing this even if you have previous experience of video recording with the same speaker. As mentioned above, people are more sensitive about video recording than they are about audio recording. For example, the native speaker might be wearing the same dress that she was wearing during the previous video session, and now she feels uncomfortable because of it. How this permission should be obtained depends on the particular situation (see the discussion of informed consent and the related problems in Section 7.2) – sometimes it is enough just to say “I will make a video recording as usual, is it OK?”.

The second step is preparing the equipment. You should attach the camera to the tripod, connect all the cables, correctly frame the subject, check the focus, check the input sound level, etc. (see Section 4.4). Depending on the light and your camera, you may need to adjust the white balance. If the situation permits, making a trial recording.

After starting the recording, clap your hands together in front of the camera, especially if you are making a separate audio recording: this clap will make the synchronization of video and audio tracks much simpler.

While recording do not forget to monitor the process. Several things should be monitored:

- input sound level;
- framing;
- focus;
- battery level;
- free space on the memory card.

Do not forget to record the metadata.

A number of recommendations which concern the process of audio recording are also relevant for video recording. Thus, it is worth keeping in mind the recommendations given in Section 3.4.

4.6. Processing the video data

4.6.1. Choosing video editing software.

Unlike audio recordings where the processing of files is relatively simple and often comes down to renaming of files, video files require a lot of processing (see Section 4.1.2). First, a video camera usually creates many files during one recording session and if you want to have an unbroken recording of this session you will need to merge these files into one. Second, you will usually need to convert the recorded files into a required format. Thus, you need a piece of software that can carry out these operations. You may need more than one piece of software, e.g. the Handbrake programme (see Section 6.4.1) can perform conversions better than many other programmes, but it does not have many editing options.

I cannot propose a reliable solution concerning video editing software as there are so many different programmes available. Some of them are described in Section 6.4 but it is likely that you will be able to find your own solution, which better suits your particular tasks.

4.6.2. Choosing a format

The format for rendering a video depends on your particular goals. If you would like to upload video footage to the internet, you will need to ensure the file is small enough, otherwise it will not work properly. However, a smaller file size means a lower quality video. The native, high definition format of most video cameras results in very large files which are too big not only for uploading but also for other operations (e.g. for inserting into a Power Point presentation). Thus, when choosing the format for rendering a video you should aim to strike a balance between the size of the file and the quality of the resulting recording.

A video file has a number of characteristics that influence the picture quality.

(a) Progressive vs interlaced video

There are two ways in which a picture may be displayed on a screen: progressive and interlaced. In the case of progressive video, every frame is drawn line by line, while in the case of interlaced video all odd lines are drawn first, and the even lines are drawn after them. The two parts of a frame in an interlaced video (one with the odd lines and the other with the even lines) are called “fields”.

These types of video are labelled as (p) or (i), with the letter usually indicated after the number of pixels in one line (e.g. 720i) or after the frame rate (e.g. 25p).

An interlaced video makes the movements on the recording appear smoother than in a progressive video, but in the case of fast movements the “comb” effect may appear (in Figure 4.11 it is marked with the white arrow).



Figure 4.11. The comb effect

(b) Frame rate (the number of frames per second – fps)

The minimal frame rate for a contemporary video is 25 frames per second (which corresponds to standards such as PAL and SECAM). A lower frame rate makes the recording look like an old-fashioned video made by a mechanical camera. It is preferable for videos to be at 30 fps, 50 fps or 60 fps. Some professional cameras allow even better quality (e.g. 120 fps) but I do not think that such quality is really necessary for linguistic documentation.

The number of fields in an interlaced video is twice as big as the number of frames, e.g. 50 fields per second is equal to 25 fps. It can therefore cause confusion if the number of fields is indicated instead of the number of frames, i.e. 50i can mean either 25 frames per second and 50 frames per second.

(c) Width and height of a frame and the aspect ratio

The width and height of a frame is expressed as the number of pixels in a horizontal line and in a vertical line, e.g. 680 x 480 (VGA standard), 1280 x 720 (HD 720 standard), 1920 x 1080 (HD 1080 standard). The more pixels in your video, the better the quality is and the bigger the file size. Very often only the height of the frame is indicated, so you can see labels such as 720p (progressive video 1280 x 720 pixels) or 1080i (interlaced video 1920 x 1080 pixels).

The ratio between the width and height of a frame is called the aspect ratio. The most typical aspect ratios are 4:3 (e.g. VGA standard) and 16:9 (e.g. HD 720 and 1080 standards).

(d) Format of the video

A video format is a system of compression of a video recording. There are different systems of compression, e.g. MPEG4 Visual, AV1, H.264. Sometimes they are named by codecs – software (or hardware) which can encode and decode the corresponding video formats.

Do not confuse video formats with containers (e.g. AVI, MP4, etc.), which also contain an audio recording in some audio coded format.

Every format has its own pros and cons. You can find lots of opinions on this point on the internet, but for a justified decision I recommend trying various formats and choosing the one which looks the most appropriate for your purposes. It is also worth consulting with the archive where you plan to deposit your data.

The main principles that should be followed when choosing a video format are the following:

- (1) Try to minimize conversions to other formats: a conversion usually decreases the quality of your video;
- (2) Try to avoid rare formats which are supported only by a particular piece of software (especially if these formats are proprietary), see section 5.2.

(e) Format of the audio

There are various audio formats that can be used in video containers. If audio is indicated as PCM, this means that the recording is done in a lossless format (usually WAV). If it is indicated as AAC, AC3 or MPEG, it means that a lossy compression will be used. However, even if your video camera records the sound in one of these formats, it does not mean that the quality of audio will be bad. If the sampling rate and bit depth are appropriate (see 3.2.1), the audio quality will depend more on the presence/absence of ambient noise and the quality of the microphone than on the audio format used in your video camera. It is also important to remember that a conversion from a lossy format used in your camera to a lossless format cannot improve the quality of the recording.

4.6.3. Combining audio and video tracks

If the sound recorded on the video camera satisfies your requirements, you do not need to combine the audio and video tracks. But if a separate audio recording is of a higher quality, it can be combined with the video recording.

In order to do this, you should remove the audio track from the video recording and add the audio track from the audio recording. The clap, which you recorded at the beginning of the recording should help you: the peak on the audio track should correspond to the closed hands on the video recording. If you forgot to clap, you should find some other sharp sound, the source of which can be seen on the video, since without something like this synchronization will be a very challenging process.

4.6.4. Other operations

Once you have overcome all the challenges which have been described above (choosing the software, choosing the format, and synchronization of audio and video), other operations should be fairly straightforward.

You can edit the recording (including operations such as adding subtitles) with video editing software. Study the instructions for a particular piece of software for a more detailed description.

Chapter 5. Data and metadata

- 5.1. Backup copies
- 5.2. Non-proprietary file formats
- 5.3. Structures and rules
 - 5.3.1. File naming
 - 5.3.2. Grouping of files and distribution of data across files
- 5.4. Consistency
- 5.5. Documentation of methods and conventions
- 5.5. Metadata
- 5.7. My own experience

It goes without saying that field linguistics is about collecting data. But it is not enough just to collect the data – it is important not to lose them. And it is much easier to lose data than it is to collect them. Data can be lost in two ways: physically and functionally. If your laptop is broken, a bag with a hard drive is left on a bus, papers are burnt in a fire – all these are physical losses of data. If you are listening to a recording of a native speaker but you do not know and cannot define who is speaking, what language he/she is speaking, when this recording was made, then this is a functional loss of data because you cannot use these data for anything useful (see Figure 5.1). Even if you are able to identify the language, it is not enough, since you can hardly make definite statements about this language based on a recording without knowing all necessary details.

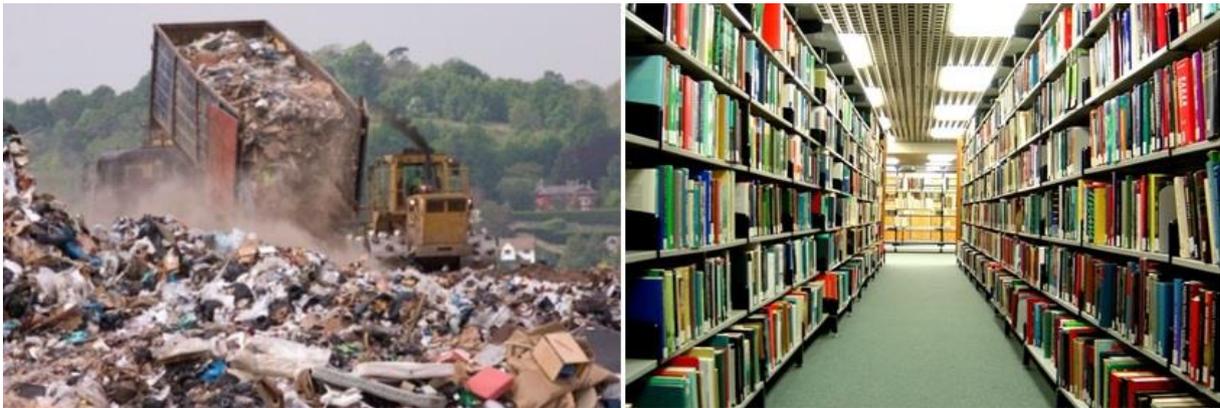


Figure 5.1. Data: to lose or not to lose? The difference between improperly (left) and properly (right) managed data

There are several data management principles that can help you to keep your data safe. They are:

- make backups;
- do not use proprietary file formats;
- implement a structure and rules for managing your data;
- be consistent;
- document your methods and conventions;
- provide metadata.

Following these principles is a necessary but not a sufficient condition to prevent data loss. The final destination of collected data should not be the researcher's shelf. Data should

be deposited in an archive where they will be accessible to other people²⁶. I recommend consulting the course “Archiving for the Future: Simple Steps for Archiving Language Documentation Collections” (Kung et al. 2021). Detailed information on the process of archiving and particular archives can be found also in Meakins, Green & Turpin (2018: 83–95).

5.1. Backup copies

Making backups is the main method for preventing the physical loss of data.

In 2018, a fire destroyed a large part of the collection in Brazil’s National Museum. Audio recordings and other materials on indigenous languages (including some which were already extinct) were completely destroyed, and there is no way to get these back. While discussing this awful situation, some people put it down to the lack of financing for making digital copies and compared it to some digitization projects in the US whose financing was higher than the annual budget of the museum. From my point of view, such explanations are not convincing. Of course, making high-quality digital copies with the help of highly qualified professionals is a costly process. However, even if you do not have sufficient funding for such projects, very simple things can be easily done. One person, two regular computers (with good soundcards), and tape and/or reel-to-reel recorders are enough to digitize about 2000 hours of recordings per year. The difference between copying in this way and “high-quality copying” is not that crucial and in any case it cannot be compared with the difference between a digital copy of average quality and a complete loss of data. Situations where data have not been digitized are by no means rare, and I have encountered such situations many times in my life. I suppose that the lack of funding is a minor problem. The main problems, however, are the lack of a true appreciation of just how valuable the data are and the lack of any sort of data management culture.

Making backup copies is an essential part of fieldwork which requires some basic knowledge. At its simplest, making a backup is “copying the data to some other storage medium”. Of course, even having an extra copy does not guarantee that your data will not be lost, but it is much better than having no backup at all. There are several principles that one can follow to avoid data loss.

(a) Make a backup copy as soon as possible

A basic backup system should be simple. The question “When is it best to make a backup, now or later/after dinner/next morning, etc.?” should have a very definite answer: “Now!”. Everyone should set up a basic backup workflow which is the most comfortable for him/her, but in any case, it should be used consistently. My own principle is as follows: the first thing I do after returning from a fieldwork session (or even earlier, for example, in the transport taking me back to my accommodation) is to copy files from the memory card to both my laptop and to an external hard drive.

(b) More copies are better

It is difficult to say unambiguously how many copies are “enough”. It depends on many factors. It is clear that one backup is not sufficient. People do not often check whether the backup copy is in good condition. If something happens with the backup, it usually remains unnoticed and is only discovered when the main copy is lost and there is a need to restore it from the backup. Thus, it is good to have several copies of any data.

²⁶ This should not be taken to mean that the researcher must immediately make all his/her data accessible for other people. Most archives provide the option of restricting access to the data for some period of time (for example, if the researcher is actively working with these data and wants to finish his/her research). A discussion of various issues concerning public access to research data is given in Seyfeddinipur et al. (2019).

(c) Place backups in different locations

A sufficient number of backups does not guarantee data will never be lost. If you made copies on five hard drives, put them in a bag and then left this bag on a bus, it means that your backup strategy was not successful. It is important to store your data in different places, in order not to lose them in case of fire, flood, theft or some other disaster. It is good to have copies of your data at your work, at home, in the cloud, at your colleague's house, and in an archive.

Researcher M. compiled a large amount of data from extinct and almost extinct varieties. He asked a friend who moved to live in the Southern Hemisphere to take with her a hard drive containing a copy of his data and store it there, so that his data would have a chance of surviving in the unlikely event of everything in the Northern Hemisphere being destroyed in an atomic war.

I would not say that it is necessary to go to such extreme lengths, but this story illustrates an appropriate attitude to data. The researcher should never be too optimistic, but should always try to foresee any possible situation that might jeopardise their data and be prepared for it.

There is one principle that I strongly recommend following. If you work in the field with your colleagues, always backup your data so that everyone has a copy.

Researcher K. organized a fieldtrip to a very distant island on the opposite side of the globe. There were three members in her team. Lots of valuable data were collected. On the way back, a bag containing all the recordings was stolen and all the data were lost forever.

This is a very sad story that shows how serious it can be if the basic principles of backup are not met. The researcher should also keep in mind that having a bag stolen is a rather typical situation in many countries. For this reason, it is important to keep the memory cards with copies of your data in different places and not to put them all into one bag or one coat when you are in the field.

I also recommend not being paranoid and simply copying your data for your colleagues when there is a chance. It is much better for data to be "stolen" by a person who understands their value than for the data to be stolen by a person for whom they mean nothing.

(d) Use different storage mediums and facilities

An obvious advantage of digital data is that they can be easily copied. There is however a negative side too: there is no storage medium which is absolutely reliable. All storage media are complicated devices which means that they can be easily broken or malfunction. I recommend using different devices. You can store your data on memory cards, on external and internal hard drives, in the cloud, on CD/DVDs, etc. This approach helps to increase the lifespan of your data. And of course, it is good to store your data in an archive (or several archives) because an archive is a place specially equipped to store data.

(e) Retain older backups to maintain a version history

Even if you make enough backup copies, it does not completely protect against data loss. It is typical, when work on a file is in progress, that the file becomes corrupted or contains inappropriate data. For example, you may accidentally select all text in a text file, type the last sentence, and inadvertently overwrite all the previous text, and without noticing proceed to save the file. If you make backup copies of this file, this issue will be reflected in all subsequent backups. One way to avoid this issue is to retain earlier backups made at different

times in the past (i.e. do not overwrite them with the latest backup), thereby preserving a version history of all files. In this case, you can restore an earlier version of a file which was saved before an error appeared.

It can be useful to store such backups on a medium that does not allow data to be changed (e.g. on a finalized CD or DVD disk).

5.2. Non-proprietary formats

There is one more situation when data can be functionally lost. Imagine that some researcher compiled a vast collection of linguistic data and placed them in an archive. After twenty years, some other researcher decided to work with these data. Unfortunately, it turned out that these data were saved in formats which are no longer supported. The software which was used to create and open these files does not work on contemporary operating systems, while the structure of the formats is not known since these formats were proprietary and the company which developed them kept them a secret. For the same reason, there is no alternative software which can process these data. Someone might be lucky enough to emulate the old operating system, to find a legal version of the original software and run it, to open one of these files and to save it in another format. However, it can be too time consuming to repeat this operation with thousands of files in this collection, and automatic processing of these files is impossible for the same reason.

The problem described is one of proprietary formats. A proprietary format is a format developed by a particular company which keeps various rights concerning this format. From the point of view of a field linguist, there are two features of a proprietary format that are important: (1) whether the system of encoding/decoding is kept secret; (2) how many pieces of software are able to process files of this format.

In general, the best solution that prevents data loss is to use widely used non-proprietary formats. Non-proprietary formats do not suffer from the limitations described above: the structure of the formats is known, and there are no obstacles to creating new software which will be able to process these files in case the existing software is not appropriate for some reason.

For example, you can use TXT (plain text), XML, CSV, PDF, or HTML formats to keep text information, and use the WAV format to keep your audio recordings. These are non-proprietary formats, and there are many different pieces of software that can process them.

The situation with video recordings is more complicated. In case of audio recordings, the standard set of recommendations (choose a non-proprietary and lossless format, buy a recorder that supports this format, and store your data in files of this format) can be easily fulfilled by choosing the WAV format. If we formulate the same instructions for video recordings, they will sound completely unrealistic as it will be almost impossible to find a video camera that uses non-proprietary and lossless formats for both video and audio. For this reason I recommend the following:

- choose a video camera that records in widely used formats supported by different pieces of software because it means that encoding/decoding algorithms of these formats are not known only to one manufacturer (even if the chosen format is proprietary, it is better than using a very rare non-proprietary format which can be forgotten in two decades);
- consult in advance with the archive where you plan to store your data about the preferred video format;
- convert your video files to this format and store both the original and converted files;

I also recommend keeping in mind the problem of proprietary formats when choosing the software (see section 6).

5.3. Structures and rules

A structural approach to organizing data should be applied to all data types right down to pieces of paper that can be systematized and put on a shelf in an appropriate order. However, the contemporary standard for storing data involves computer files and so the following discussion will focus on files.

Every file has a name which consists of a proper name and an extension. The first of these is arbitrary (i.e. a user can assign to a file any name he/she wishes), and the latter is conventionally meaningful (i.e. it usually denotes the data type and correlates with a particular piece of software). Files can be placed in different folders which also have their own names.

Thus, three main questions concerning the structure of your data are:

- how should files be named?
- how should the data be distributed across files?
- how should data be grouped into folders?

5.3.1. File naming

File naming is one of the essential topics of data management.

A filename can contain information of two types: (1) information about the place of this file in the structure of the whole system (file external information); and, (2) information about the contents of the file (file internal information). It is unusual for a filename to contain no information at all, although it is theoretically possible to name files using a random name generator (such as is used for generating passwords), but I've never heard of anyone who takes such an approach. An example of a filename containing external information is 00127.wav – one can expect that there is also a file named 00126.wav which was catalogued or created earlier than 00127.wav, while a file containing internal information might be something like A_song_in_Negidal.wav.

Very often information of both types is combined in the same file name, and this may either be distributed over the two elements of the file, or one element may combine both types of information. For instance, in the name 00127.wav, the part before the dot contains external information, and the extension WAV indicates that this file is an audio file (which is internal information). In the name 015_song.doc, '015' is an index showing the number of the file among other files (external information) and 'song' as well as the extension DOC say something about the content of the file (i.e. they bear internal information). In the name GER_102.mp3, 'GER' bears both external and internal information, if the files in the system are primarily structured according to the language, and GER denotes a particular language.

A file name may be semantically transparent or not. For example, the file names Part1_Section2_Item255 and A_story_by_Anna_Petrovna_Trahtenberg_in_Komi are semantically transparent. The same files could be named, for example, 1_2_255 and ST_APT_KO respectively, but these names are not semantically transparent.

The choice of a file naming system – should files contain external or internal information and how semantically transparent they should be – depends on the particular situation. If the collection of files belongs to one person, contains only a few files and will not be used by other people, semantically transparent names containing internal information can be quite useful because with a quick glance at the filename the owner can determine if it is the required file or not. If a collection contains thousands of files used by many people, semantically transparent names containing file internal information are not so useful. A more efficient way to find the necessary information is to use special metadata files or systems

where you can easily find a file by its name (which preferably should be short) and get all necessary information about it. Thus, it is necessary to understand how your collection of files will be used and choose the appropriate system of naming.

An important factor to bear in mind is the search options that your filenames will facilitate. For example, if someone wants to find files containing recordings of the German language in a collection, and all the files follow the format GER_012.wav and are in one folder, it will be possible to sort files by name and easily see files starting with 'GER'. If instead the files have names following the format 012_GER.wav it is not possible to sort files in this way, although it is still possible to search for files containing 'GER' and get the list of the required files. If the files have names like 012.wav, neither of these operations will be possible and a metadata file or database will be needed to find the required files. In a big archive containing lots of mixed data, such search methods rarely work, thus there is no need to have meaningful filenames and a database with search options should exist instead.

There are several principles of correct file naming:

(a) Consistency.

If you created a naming system for your files, follow this system. For both the researcher who owns the data and for other potential users it will be difficult to work with files if their names do not follow one standard.

(b) Think about the potential users.

Unexperienced field researchers are often prone to underrate the importance of field data. They often think: "Who needs this data besides me?" However, no one can predict the value of particular data for future researchers. For this reason, it is important to organize your data in such a way that they can be used by other researchers.

The next principle follows from this one.

(c) Describe all conventions.

Even the most semantically transparent file names are more meaningful to the researcher who created them than to anyone else. And of course, semantically opaque names may be meaningless even to the researcher. It is important to have a special file where all naming conventions are described. Let's imagine that a file name contains the date of recording indicated as 030506. Is it the 3rd of May 2006? Or the 6th of May 2003? Or the 5th of March 2006? This is impossible to figure out without explicitly described conventions. All abbreviations and principles used in file names should be accurately described.

(d) Be aware of diversity of computers and operating systems

There is a big difference between file naming rules on contemporary computers and computers of the past. Thirty years ago, when many computers used the MS DOS operating system, filenames were limited to a maximum of eight characters (only letters from the basic English alphabet, numbers and several special symbols were allowed), followed optionally by a filename extension consisting of at most three further characters. Contemporary systems allow the use of long filenames with various symbols. However, you can never know what system will be used by other potential users of your data (e.g. your colleague on the other side of the globe, or an archive that sorts the data with software developed many years ago, etc.). The most obvious solution to this problem is to make filenames simple and to not use all the possibilities that you have.

The following rules should be followed in order to create universal file names:

1. Use only the symbols from the basic English alphabet (A-Z), digits (0-9), a hyphen (-) and the low line symbol (_). Do not use spaces or any special symbols such as ! [] # & %, etc.

2. Use only one case, either uppercase or lowercase. Case is not usually a distinctive feature (i.e. you cannot have files 'Text.txt' and 'TEXT.txt' in the same folder on a computer running Windows). Some systems do not distinguish cases at all and can change all symbols

into one case. If small vs capital symbols were used to distinguish parts of the name, this distinction could be lost. A well-known anecdotal example is a dialog form `TfrxXlsExportDialog` which becomes `TFRXXLSEXPORTDIALOG` if written in capital letters and crucially changes its meaning. To avoid such situations, it is better to use the underscore symbol ‘_’ to split elements of a filename.

3. Filenames should not be too long.

It is difficult to say what is ‘too long’ for a filename as there are lots of different file systems and limitations imposed on filenames by particular software. Of course, the most reliable are ‘8.3’ names (eight characters for the name plus three characters for the extension), but such names are usually only any good for archives that use semantically bare indexes and are of less use for researchers who would like to have filenames which contain more information. In any case, it is good not to make very long names: it is more difficult to read them (they are usually truncated on the screen), and copying a collection with many long names can take a lot longer.

(e) Try to think about the future

It is good to try and prevent potential problems. Otherwise, you may face rather irritating situations.

When, in 2006, I started my fieldwork on the Ingrian language and organized annual expeditions to the Ingrian villages, I came up with a system of file naming that looked convenient to me. These names started with a unique three-digit numeral index given sequentially to all recorded files: `001_...`, `002_...`, `003_...`, etc. This was useful because when the files were ordered by name they were also kept in a chronological order. Unfortunately, I did not properly estimate the amount of data that can be collected by a group of researchers in the course of systematic fieldwork. In 2014, I realized that the number of collected files would soon exceed one thousand and a three-digit number would no longer be enough. What could be done? The simplest solution was to continue with four-digit numbers (`1000_...`, `1001_...`, etc.) but in this case ordering files by name would no longer be chronological: the file numbered 1100 would appear after 109 but before 120, etc. I considered the idea of renaming all files to use four-digit numbers: `0001_...`, `0002_...`, etc. In this case, ordering by name would retain the chronological order. However, I rejected this idea. Renaming files on my own computer would be irritating but possible, but what about the backup copies on DVD, the copies that other researchers had and the copies that were already submitted to archives? Changing a system that had been used for many years would create an awful mess. Fortunately, a solution was found. I decided that the first number in the three-digit index should be considered as a hexadecimal digit (with the next two digits remaining as decimal). This means that the file `999_...` will be followed by `A00_...`, `A01`, etc. In this case, the older names remained as they were, while the new files did not break the chronological order when files were sorted by name. I did not encounter this problem again: unfortunately, there are less and less Ingrian speakers nowadays, and new recordings are very rare.

In this story an appropriate solution was found. However, this is not always the case, and so it is better to foresee potential problems.

5.3.2. Grouping of files and distribution of data across files

Systematic fieldwork results in various kinds of data, and it can become problematic to keep all files in a single folder.

Data are not completely independent of each other, but they are related in various (sometimes rather complicated) ways. A researcher might record several audio files during one fieldwork session and provide them with a full transcription and metadata, then record some more data from other speakers during the same trip, and later might record new data from the first speaker but have the transcriptions at various stages of completion, etc. What can be done to prevent all these data from becoming a complete mess?

One of the most useful principles is the principle of bundles: files of different types which concern the same piece of fieldwork should have the same name. Different types of data can usually be easily distinguished by their file extensions. For example, with a recorded audio file named 001_Text_Maria-Ivanovna.wav, the corresponding metadata file would be named 001_Text_Maria-Ivanovna.xml, the ELAN transcription would be 001_Text_Maria-Ivanovna.eaf, and so on. It is very easy to understand that all these files relate to the same piece of fieldwork, and sorting by name will place these files together.

The system of folders and filenames allows for data to be organised hierarchically. For example, the researcher can make a folder which corresponds to the language (and has the appropriate name), and subfolders in this folder which correspond to different dialects (and also have corresponding names). Inside every subfolder there are further subfolders which correspond to different years, and subfolders inside these which correspond to different data collection methods (e.g. spontaneous speech in one subfolder, elicited files in another, etc.). It is the researcher's choice which features are the most important and should therefore be higher up the hierarchy and which are less important. Of course, the list of features is also a researcher's decision.

The same hierarchy can be achieved by using file names which consist of multiple elements, e.g. GER_BAVARIAN_2015_ELICITATION_003. In this case, it is not necessary to use different folders (though it can still be very useful).

It is important to distinguish the resulting data from the data that are being processed. The resulting data should be organized in a way that is most useful for a "reader", i.e. a person who will use this data for his/her research. The data that are being processed should be organized in a way most comfortable for a "writer", i.e. for the person who collects and prepares this data. For example, if you work in a team where every member fulfils a separate task within a more general task, it is useful to group the data collected by every researcher separately. In this case, every researcher is responsible for his/her own data and can update them without problems. However, for the researcher who is working with the resulting set of data it is usually not important who collected these data (if necessary, this information can be obtained from the metadata), so grouping of data by collectors is suboptimal. Practically, this means that the researcher should devise two strategies of grouping files and organizing data, one for the processing stage and the other for the final set of data.

5.4. Consistency

The importance of consistency has already been addressed in relation to file names, but in fact it is a much more general issue. The main idea of consistency is that when a set of rules is decided upon, one should adhere to them for the whole set of data and not change them. For example, if you decide to keep every sentence in a separate audio file, and later you realize that there are too many files and decide to keep ten sentences in a file, and later still you decide that it is difficult to count sentences and start to record a whole session in a single file, it will be a complete mess and it will be very difficult to work with these data even for you (not to mention other researchers). For this reason, it is important to think in advance about the potential problems you may encounter and to choose a system that will be the most appropriate for your data. Of course, it is possible that old systems become inappropriate because circumstances have changed and a new system should be used. In this case it is very

important to document these changes precisely (as well as noting down when you switched to the new system).

5.5. Documentation of methods and conventions

Many abbreviations, conventions and principles of organizing the data might be evident for the researcher when fieldwork is in progress, but can be quickly forgotten, and in any case will not be transparent to anyone else working with the data.

Even more serious problems may occur when the data are the object of machine analysis. A computer program cannot make guesses or search for external information required to correctly process the data.

The only way to avoid these problems is to document all the methods and conventions that were used. Of course, documenting these can take some time but this time will be compensated for by the time not wasted “decoding” the data and figuring out the conventions.

5.6. Metadata

Metadata are data about data. A story recorded from a native speaker is linguistic data. In order to use this recording for linguistic research, it is important to know various details about the recording: what is the language, what is the dialect, when and where it was recorded, how old is the speaker, etc. All these details constitute metadata. Some researchers consider the metadata in the wide sense. For example, Nathan and Austin (2004: 179) introduce the notion of “thick metadata” that includes transcriptions, translations and other higher levels of description to the recordings. Though this vision is quite logical, I consider metadata in a narrower sense, namely as those data that do not serve as linguistic material (although they may serve as sociolinguistic material). Without metadata, the value of linguistic data is questionable, so it is necessary to provide appropriate metadata for all the collected data.

There are three essential questions concerning metadata:

- (1) What metadata are needed?
- (2) Where should metadata be stored?
- (3) What format should be chosen for metadata?

There is no universal answer to the question “What metadata are needed?”, as very much depends on a particular situation. For example, if you are working in a language community with a low level of migration and low sub-dialectal variation, the place of recording is enough to identify the dialectal characteristics of the data. In a different community, with a high level of migration and considerable differences between the local varieties, it may be necessary to know both the place of birth of the speaker and the place of recording (and possibly many other details, such as the place of birth of the speaker’s parents, etc.).

I consider the following metadata as “basic” in the sense that they should always be collected and saved:

- (a) Name of the native speaker

There are many reasons why it is important to know the name of the speaker. In particular,

- some other researchers may make recordings in the same place and it will be important to distinguish or identify a speaking person;
- it is important to distinguish between dialectal and idiolectal features;
- for some native speakers and their relatives it is important to see their names in a book or other published materials.

See also the problem of anonymized data in Section 7.3.9.

(b) Place of recording

It is good when metadata contains not only the name of a particular settlement but some additional characteristics, for instance the region and geographical coordinates. Very often there are several regions with the same name in a single area. For example, to the west of Saint Petersburg there are two villages named Ropsha with a distance of only 100 kilometres between them. Also, a settlement can be renamed or abandoned/destroyed, so it will be absent from future maps. In some regions, settlements can have alternative names in several local languages and it makes their identification problematic.

(c) Date of recording

The date of the recording can bear much useful information, as it helps to restore many details concerning fieldwork. For example, I often recorded similar pieces of data (e.g. the translation of the same sentence) from the same native speaker. Sometimes this data had some differences and it was important to know what was said at first and what was said later. And of course the date of recording can tell much about the context of a fieldwork session. For example, if a native speaker told a story about a recent festival but did not say what this festival was (because it seemed evident at that moment), the date of the recording can help to figure it out.

(d) Year of birth of the native speaker

All languages are constantly changing. Every generation has its own linguistic features. Thus, it is important to know how old the native speaker is. Sometimes the year of birth can give many other pieces of information. For example, the Ingrian language was taught in the local schools only from 1932 till 1937. Knowing the native speaker's year of birth it is possible to estimate whether the native speaker attended classes in Ingrian or not; this is a feature that can influence the language of the speaker. This is especially important for speakers of the neighbouring Votic language who studied Ingrian as a native language in school, and so whose Votic was prone to Ingrian influence.

(e) Place of birth of the native speaker

The place of birth of the native speaker is very important as it is the main key to the dialectal features of his/her speech.

(f) Name of the researcher

The name of the researcher can reveal a lot about the data, since every researcher has his/her own approach to the data collection process, interest in particular subjects, methods of interpreting the data, etc. Additionally, the name of the researcher can be significant for legal issues. I would also recommend documenting the names of everyone who was present at the fieldwork session.

(g) Language and variety

Since it is obvious to the researcher what language/variety he/she is working it, it is very easy to forget to indicate it in the metadata. In fact, when it concerns closely related languages or varieties, it is not so easy to distinguish them if you are not a specialist. The same concerns undescribed minor languages and varieties: it is not easy to identify them if there are only a few specialists on them in the whole world (not to mention when there are no such specialists at all).

All the pieces of metadata listed above are important in all situations. Additionally, there are lots of metadata whose relevance will depend on a particular situation. The researcher can make his/her own decision about what should and should not be included in the metadata, but if it does not create any specific difficulties, it is always better to keep more information. The following metadata belong to this group:

(a) More detailed sociolinguistic data: place of birth of the native speaker's parents, his/her education, experience in other languages, etc.;

(b) Equipment: brand and model of the recorder, microphone, video camera, etc.;

- (c) Length of the recording and size of files;
- (d) Contents of the recording: type of work, topic of research, etc.;
- (e) Information about the owner of the recording, and his/her contact information;
- (f) Links to other data, which are connected to the current piece;
- (g) Information about the place where the data are stored;
- (h) Research methods and theoretical background used in the project;
- (i) Description of the project and its participants;
- (j) Experience of the project participants;
- (k) Sources of project funding.

I doubt that it is possible to compile a comprehensive list of metadata. The researcher should think carefully about what metadata might be important in his/her situation and document these data.

There have been several attempts to elaborate metadata standards. One of the most widely known standards is the Dublin Core Metadata Element Set developed as part of the Dublin Core Metadata Initiative (DCMI). This standard was used as a base for the Open Language Archives Community (OLAC) initiative that formulates its own metadata set for the specific needs of the language archiving community. These metadata describe language resources and include the following elements (see <http://www.language-archives.org/OLAC/olacms.html#Attributes>):

- Contributor (An entity responsible for making contributions to the content of the resource);
- Coverage (The extent or scope of the content of the resource);
- Creator (An entity primarily responsible for making the content of the resource);
- Date (A date associated with an event in the life cycle of the resource);
- Description (An account of the content of the resource);
- Format (The physical or digital manifestation of the resource);
- Format.cpu (The CPU required to use a software resource);
- Format.encoding (An encoded character set used by a digital resource);
- Format.markup (A markup scheme used by a digital resource);
- Format.os (An operating system required to use a software resource);
- Format.sourcecode (A programming language of software distributed in source form);
- Identifier (An unambiguous reference to the resource within a given context);
- Language (A language of the intellectual content of the resource);
- Publisher (An entity responsible for making the resource available);
- Relation (A reference to a related resource);
- Rights (Information about rights held in and over the resource);
- Source (A reference to a resource from which the present resource is derived);
- Subject (The topic of the content of the resource);
- Subject.language (A language which the content of the resource describes or discusses);
- Title (A name given to the resource);
- Type (The nature or genre of the content of the resource);
- Type.functionality (Software Functionality);
- Type.linguistic (The nature or genre of the content of the resource from a linguistic standpoint).

Other well-known standards are ISLE Meta Data Initiative (IMDI) elaborated by the Max Planck Institute for Psycholinguistics (see <https://archive.mpi.nl/forums/t/imdi-metadata-information/2933>) and more advanced Component Metadata Infrastructure (CMDI) elaborated by CLARIN (see <https://www.clarin.eu/content/component-metadata>).

The questions “Where should metadata be stored?” and “What format should be chosen for metadata?” are not independent, as storage and format are usually interrelated.

There are different options as to where the metadata should be stored:

- in the researcher’s head;
- on paper;
- in a text file;
- in a spreadsheet;
- in a special metadata system.

It is completely inappropriate to store metadata in your head. It is absolutely typical that after a working session in the field the researcher is able to remember all the details, but several days later, after subsequent fieldwork sessions, earlier information is forgotten. It is also difficult to be sure that you have remembered everything correctly: if your head is the only place you store information you are unable to check whether this information is correct.

Very many old school researchers continue to jot down metadata in a notebook. I do not think that paper is a completely inappropriate storage medium, as it is better to have metadata on paper than to fail to record any metadata at all because you are not accustomed to computers, but it is important to make a copy. The simplest way of copying the data on paper is to take photos of them. A camera or a contemporary mobile phone can be easily used to make a copy and to transfer the data to a computer. It does not take much time.

In the middle of the 2000s, I visited an archive where many valuable data were stored. I was really shocked to discover that the only catalogue they had was a notebook with the list of recordings. The first thing I did was to take my camera and photograph this catalogue (it took about half an hour). Fortunately, several years later they digitized both the catalogue and all the recordings.

A more advanced way of storing metadata is to put them in a file or a set of files. In this case, two questions arise: (a) what is the correspondence between metadata and data files, and (b) what is the format of metadata files.

You can follow the principle “a separate metadata file for every piece of data” or you can create metadata for larger units, e.g. for the whole collection. The first case is useful for people who are interested in a particular recording: they can easily get to all the information about it. The system of bundles (see 5.3.2) is very useful in such a situation as the metadata file will have the same name as the corresponding pieces of data (only the extension will be different). The second approach provides information about whole datasets and so it is easy to search for data in a collection as it only involves opening a single metadata file. In fact, it is good to use both options, and this can be easily achieved by compiling all metadata about individual files into a single master file.

When choosing the format of the metadata file you face a typical problem: “simple” formats are usually more transparent but have less options. For example, it is possible to store metadata in a basic text file (TXT format). This format does not depend much on a particular piece of software (both simple text viewers and advanced word processors can usually read TXT files), but it does not offer many search options. In this case much depends on a particular researcher: (s)he can organize metadata in a structured and systematic way (e.g. define some categories, follow a chosen order, etc.) or just freely jot down the information, in which case the metadata will be unstructured and will differ from file to file. A better option is an XML file, which is in fact the same as a text file but structured. The special formats for advanced word processors (e.g. Microsoft Word) are not transparent and future compatibility

issues often arise. However, advanced word processors provide useful options, in particular, they allow for metadata to be stored in tables and have various sorting options.

One of the most typical solutions for storing metadata is a spreadsheet, a computer application for organising, analysing and storing data in tabular form, which does not have strict limitations on the number of columns and rows and which has filtering options. Data stored in a spreadsheet can be searched quickly and in meaningful ways.

An even more advanced option is storing metadata in a database, because it provides even more search options. However, these advanced options are often not so vital for private collections, and using a database has its own disadvantages. First, special skills are required for working with a database, and second, a database can become outdated (e.g. Microsoft Access lost its popularity dramatically in the recent decade).

The most advanced option for storing metadata is a special metadata manager. At first, metadata systems were designed for the archives that store the data. If we look, for example, through the list of metadata elements from OLAC (see above), it is easy to notice that the set of metadata required for a language resource by an archive is different from the set of metadata which a linguist needs for the analysis of a particular recording. Later some tools were designed specifically for field linguistics. Though most of my colleagues (including myself) do not use such managers, this area is in the early stages of development and it is very likely that soon certain metadata systems will become a standard for field linguistics. Since the development of such tools happens very fast, I do not discuss particular systems in detail, but some basic information about them can be found in Section 6.6.

Whichever format is chosen for metadata, it is important to structure it. First, it is easier to work with structured metadata, because the necessary information can be easily retrieved. Second, it is easier to convert structured metadata into other formats. Third, they can be used for automatic searches. But what is structured metadata? It is a system of features (preferably hierarchically organized), where every feature corresponds to one element (preferably minimal) of metadata.

For example, while preparing audio and video recordings for depositing in The Endangered Languages Archive (ELAR), I used a structure consisting of five groups of features:

- (a) File (technical information about the file),
- (b) Recording (information about the recording and further processing),
- (c) Language consultant (information about the native speaker),
- (d) Contents (description of the contents of the recording),
- (e) Access (information about copyright issues).

Table 5.1 gives an example of a metadata file with this structure.

5.7. My own experience

The principles of managing data and metadata describe an ideal situation. During real fieldwork, the researcher should make decisions that are appropriate for the particular situation. Some principles can be very important and useful and some can be (or might seem) of secondary importance. To illustrate the application of theoretical principles via a practical example I briefly describe here my own system of organizing data, which I developed in 2006 while preparing a field trip to work with Ingrian native speakers.

When developing this system, I was working under the following conditions:

- (a) I planned a series of field trips;
- (b) These trips were not individual but collective (5–8 people in the team);
- (c) The language was highly endangered so it was the last change to collect data systematically (in less than a decade, collective field trips became impossible because only a few native speakers were left);

File	
File name	VOD_MAR_ED216-KARTASHOVA
File type	Video
File properties	MP4
Corresponding audio file	None
Audio file properties	48 kHz, stereo
Duration of sound	00:40:58
Audio file size	N/A
Corresponding video file	N/A
Video: original format	MTS
Video: compressed format	MP4
Video: frame width	854
Video: frame height	480
Video: data rata	996 KBit/sec
Video: total bitrate	1125 KBit/sec
Video: frame rate	23 frames/sec
Duration of video	00:40:58
Video file size	346.496.100 bytes
Processing	Completed
Recording	
Collector's name	Fedor Rozhanskiy
Date of collection	2013-12-17
Audio recorded with	Videocamera: Sony NXCUM HXR-NX30P Microphone: Sony ECM_XM1
Video recorded with	Sony NXCUM HXR-NX30P
Recording transcribed (by whom, when)	No
Recording digitized (by whom, when)	N/A
Recording annotated (by whom, when)	No
Recording prepared for archiving (by whom, when)	Fedor Rozhanskiy, Elena Markus, December 2013
Other file processing (by whom, when)	
Language consultant	
Language	Votic
Dialect	Lower Luga
Consultant name	Kartashova Praskovya Yakovlevna
Place of collection	Peski [Liivakylä]
Consultant's date of birth	1928
Consultant's place of birth	Peski [Liivakylä]
Consultant's parents (mother: native language, place of birth; father: native language, place of birth)	Votic, Peski [Liivakylä]; Votic, Luzhitsy [Luutsa]
Comments	
Contents	
Genre	Elicitation
Detailed contents	Questionnaire on negation; questionnaire on the essive case.
Intermediary language	Russian
Other comments	Interviewer: Fedor Rozhanskiy
Access	
Rights to process the files	Fedor Rozhanskiy, Elena Markus
The owner of the recording	Fedor Rozhanskiy, Elena Markus
Location of original carrier	N/A
Access for listening	No limitations
Access for copying	No limitations
Comments	Full or partial publication requires the owner's permission (handarey@yahoo.com)

Table 5.1. Example of a metadata file

(d) It was impossible to schedule all field sessions (all native speakers were old and much depended on their state of health at a particular moment) so, at least at the initial stage of fieldwork, it was necessary to take each day as it came and work with whoever was available and willing;

(e) Almost half of the team were students who did not have any previous experience in fieldwork;

(f) At the beginning of a fieldtrip, the participants were expected to work in groups of two or three to train the unexperienced members, with everybody making a recording of the whole fieldwork session. Later everyone could work independently.

Based on these conditions, I developed the following system of data management.

1. Without any exceptions all meetings with the language consultants were recorded on a voice recorder. If several researchers visited a speaker at the same time, all of them made a recording. A simultaneous recording by several people is especially important during the first days of the field trip, when dealing with recording equipment has not yet become second nature and a person can make mistakes (like pressing the wrong button) resulting in data loss or a defective recording.

2. The basic processing of the recorded files had to be done on the same day as the recording was made. No exceptions were allowed.

3. The main database of files consisted of the “resulting” audio files and two metadata files. The resulting (processed) audio files were created from the “original” (unprocessed) audio files through several technical operations. Every resulting file had its own unique identifier. One or more resulting files were recorded during one session but two sessions were never merged in one resulting file. The number of resulting files from one session depended on the length of the session. The preferred length of files was 45 +/- 15 minutes, which meant that one resulting file would be recorded during a 50-minute session, two files during a 1.5-hour session, three files during a 2-hour session, etc. This size was chosen as optimal because the software took considerably longer to perform basic operations with longer files.

4. The names of the resulting files contained:

- a three-digit unique identifier (later it became clear that three digits were not enough – see the discussion of this problem and its solution in Section 2.1);
- the date of the recording in the format YYMMDD
- a two-letter identifier of the native speaker (in rare cases when two native speakers took part in one session, the file name contained both identifiers separated with an underscore);
- one-letter identifiers of researchers indicated in parentheses²⁷.

In 2012, during a training workshop for Endangered Languages Documentation Programme grantees, I had a heated argument with Prof. Peter Austin who criticized the idea of including identifiers of researchers in the filename. I completely agree than in most cases this information is not essential and it is sufficient to indicate it in a metadata file. However, in my case the situation was different: I was able to deduce a lot of information from knowing who took part in the session. Later it helped me a lot because I was able to select the necessary files using these identifiers²⁸.

Thus, the name of a resulting file looked like this: 280_070721LD(FK). The first part of the name, ‘280’, is a unique identifier of the file, 070721 represents the date (21st July 2007), LD is the identifier of the native speaker, F and K are the identifiers of the researchers.

²⁷ Using parentheses breaks the rules concerning the permitted symbols in file names (see Section 2.1). Luckily, I never had any problems with this, but I had to rename the files when preparing them for depositing in an archive.

²⁸ This example shows that there is no universal system of file naming: depending on the particular conditions the researcher should come up with a system that is the most convenient for his/her own tasks and needs.

5. The metadata were kept in Microsoft Word format (as this was the most convenient and easiest for reading). One file contained a table with metadata about the native speakers and the other had the metadata about the resulting audio files.

The table with metadata about the native speakers (one line for each speaker) contained columns with:

- a unique two-letter identifier of the native speaker;
- date of birth of the native speaker;
- basic sociolinguistic data: place of birth of the native speaker and his/her parents²⁹. The same column provided the source of the information about this native speaker. This information was essential at the initial stage when establishing contact with as many native speakers as possible was our primary task. While it is not ideal for two different pieces of information to be entered into a single column, this decision was taken in order to reduce the number of columns and make all columns visible on the screen without additional scrolling.
- information about field sessions with this native speaker: date of the session, identifiers of the researchers who took part in this session, and all identifiers of the resulting files recorded during the corresponding session;
- the address of the native speaker and details helping to find him/her (e.g. the colour of the house, which is often more informative than the number);
- the phone number of the native speaker;
- information about the initial grammar questionnaire collected from the native speakers³⁰;
- other comments. In particular, relations with other native speakers, information about the speaker's relatives (often the relatives asked for us to call them to make an appointment for the next session), relevant information about the health of the native speakers (e.g. it is not good to bring sweets as a present for a person who has diabetes), any unwillingness to work and the declared motivations, time restrictions for future visits (someone milks a cow at 6 PM, someone has sauna days on Saturdays, etc.), the competence of the native speaker, etc. I should stress that this column, which contained many pieces of subjective personal information, was always deleted before preparing extracts from this metadata file for any users besides the participants of the Ingrian field trips.

The native speakers were grouped in this table according to where they lived (thus, while preparing a visit to a particular village a researcher was always able to see which other native speakers (s)he could potentially visit on the same day). The settlements were listed in alphabetical order.

Different colour text was used to distinguish the native speakers: those with whom we did not yet work, those who were competent speakers, and those whose language competence was questionable.

The second metadata file contained a table where every row corresponded to a resulting file. This table contained columns with:

- the unique identifier of the file;
- identifier of the native speaker;
- a brief summary of the file's contents (preferably with time intervals indicated). The main questionnaires were usually coded with abbreviations to facilitate searching.
- the date of recording;
- information about spontaneous speech samples recorded in the file;
- information about the equipment used to record the file.

²⁹ The detailed sociolinguistic data compiled on the basis of special sociolinguistic questionnaires were kept in separate files.

³⁰ At the beginning of fieldwork in Ingrian villages, special questionnaires were designed for studying dialectal and idiolectal variation. Our aim was to collect these questionnaires from as many speakers as possible. For this reason, information about these questionnaires was included in one of the main metadata files.

Of course, these metadata files are useful only for the most basic structuring of data. The amount of data obtained during many years of work was so large that it was impossible to transcribe most of it at once. To make these data searchable I developed the following system. As the main part of the data consisted of material elicited from Russian, I created two Microsoft Word files (one per dialect) where all the Russian stimuli were typed out. Transcribing the stimuli is a task that requires neither special linguistic training nor experience in Ingrian. These Russian stimuli were transcribed by the participants of the field trips or by other people (sometimes for a small fee). As a result of this, it is possible to search through the entire corpus of elicited data using the Russian stimuli. Also, preliminary transcriptions of the Ingrian data were inserted in the same file, which makes it possible to search for particular Ingrian forms. The transcribed and translated spontaneous speech samples are stored in ELAN, and the remaining spontaneous speech samples are yet to be transcribed.

6. A master copy of the database, comprising all audio files and their accompanying metadata files, was stored on a specially assigned external hard drive. Every researcher had a right to take this hard drive and to perform the following operations:

- a) to copy newly prepared audio files from his/her laptop to the hard drive (it was done as soon as possible after the files were ready);
- b) to copy existing audio files from the hard drive to his/her laptop for his/her own research needs;
- c) to edit the metadata files on the hard drive;
- d) to copy the metadata files from the hard drive to his/her own laptop.

It was prohibited to edit metadata files which had been copied to a laptop and/or to copy metadata files from a laptop to the hard drive. In this way it was guaranteed that conflicting versions of the files would not appear and that no information was lost due files being overwritten.

7. At the end of each working day, every researcher (or every group if more than one researcher took part in a session) checked the length of all field sessions in which (s)he took part that day and requested the identifiers for the resulting files (e.g. if (s)he had one 1.5-hour session and one 2.5-hour session, five identifiers were needed – two for the first session and three for the second session). Every researcher then copied the original files from his/her recorder to the external hard drive grouped by sessions. For example, it could be a folder named 340-342_S containing all files recorded during a session (where 340, 341, 342 were the identifiers of the resulting files from this session and S was the identifier of the researcher). If another researcher took part in the same session, (s)he would place his/her files in a separate folder containing his/her researcher identifier (e.g. 340-342_N). The original files in these folders were not modified in any way: they were not renamed, not edited, etc. Then the researchers who took part in this session decided whose recording seemed to be of the highest quality and his/her original files were processed into the resulting files.

The process of creating the resulting files included:

- splitting and/or merging of the original files in order to make resulting files of the required length;
- renaming the files.

After this the resulting files were copied to the hard drive and the corresponding information was inserted into the metadata files.

8. If there was a need to have some sections of audio recordings separate from the main audio files, they were copied (but not cut) into separate audio files. In particular, all samples of spontaneous speech were saved as separate files whose names included some semantic identifier (usually the topic of the narrative), the date and the identifier of the native speaker.

9. Every day all collected data were backed up to another hard drive and to the hard drives of some participants of the field trip. After returning from the trip, additional backups were made (at first to DVDs and later to a server). Several other copies of the data were made on hard drives in order to have at least 6–8 copies of data stored in different places. A subset of the data was deposited to archives.

10. The initial system was later slightly modified. First, I decided to make copies of the original files from the recorder's memory cards not distributed by sessions. The names of the corresponding folders contained the month and year of the recordings. Second, it became clear that it is impossible to store all data on a laptop, as the audio files are too large. For this reason, I started to additionally create downsampled files (suitable for many basic tasks), which had a 22 kHz sampling rate, 16-bit depth, mono, and which were therefore more than four times smaller than the processed files copied to the external hard drive, which retained the characteristics of the original recording (usually 48 kHz sampling rate, 16 bits depth, stereo).

This system turned out to be very effective. First, not a single piece of collected data was lost. Second, this system proved to be convenient for searching through the collected data. Third, this system is rather simple, and some of its elements (e.g. the principles of file naming and organizing the metadata files) were adopted by my colleagues working in the field.

Chapter 6. Software for linguistic fieldwork

- 6.1. General issues
- 6.2. Software for audio editing
 - 6.2.1. Audacity
 - 6.2.2. GoldWave
 - 6.2.3. Sound Forge Audio Studio
- 6.3. Software for phonetic analysis
 - 6.3.1. Praat
 - 6.3.2. Speech Analyzer
- 6.4. Software for video editing
 - 6.4.1. Handbrake
 - 6.4.2. Avidemux
 - 6.4.3. VEGAS Movie Studio
- 6.5. Software for processing and storing linguistic data
 - 6.5.1. ELAN
 - 6.5.2. FieldWorks
 - 6.5.3. Toolbox
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 - 6.6.1. SayMore
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- 6.7. Software for renaming files

6.1. General issues

This chapter discusses the software that field linguists use in their work. A detailed overview of the existing programs and their functions is not required, since new versions and software appear all the time and information gets outdated very fast. For this reason, I only give a very general overview showing what kind of software a field researcher is likely to need. I list the basic functions of different computer programs and briefly estimate their main advantages and disadvantages. For each program, a full list of its features is easily accessible on the internet; links to corresponding pages are given in the chapter. This overview does not mention all the existing programs, but instead, I talk mainly about the software I have used myself or the software preferred by my colleagues working in the field.

Software that is commonly used by all researchers but has no specific features in relation to field linguistics (like Microsoft Word and Microsoft Excel) is not discussed here.

When choosing software, the researcher should pay attention to the file formats it supports. Software which supports only proprietary formats is not usually convenient for a field linguist (see section 5.2).

6.2. Software for audio editing

There are many programs that allow editing of audio files. Typically, they offer quite a number of features, but a field linguist may need only few of them. The most typical operations that are performed with the recorded audio files are:

1. Playing audio files;
2. Splitting one audio file into several files or merging several files into one file.
3. Removing unnecessary pieces from audio files.
4. Converting existing audio files into other formats or changing characteristics of the file (sampling rate, number of channels, volume, etc.).

In this section I consider three pieces of software which are popular among my colleagues. Of course, there are many other programs with similar functions.

6.2.1. Audacity

Audacity is a free, open source software product which runs on Windows, MacOS, and Linux. It has a rather simple interface (see Figure 6.1) and a detailed manual (https://wiki.audacityteam.org/wiki/Audacity_Wiki_Home_Page, <https://manual.audacityteam.org/>). It supports various audio formats and can be easily used for basic editing operations: cutting, pasting, resampling, converting, etc.

See <https://www.audacityteam.org/>

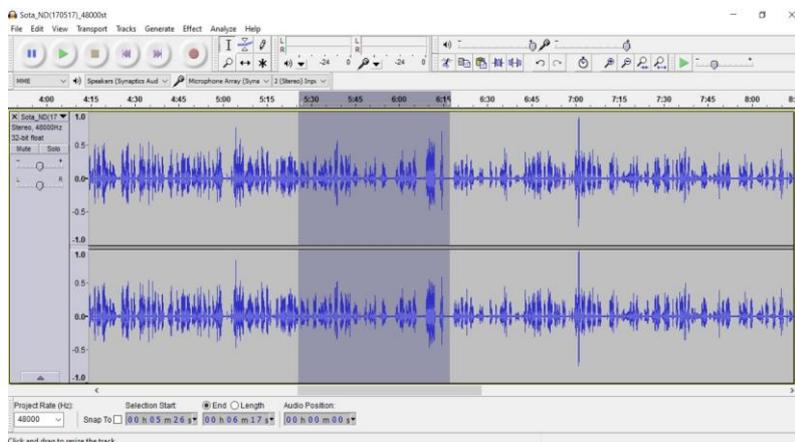


Figure 6.1. Screenshot of Audacity (version 2.0.0)

6.2.2. GoldWave

Unlike Audacity, GoldWave is a commercial software product. It runs on Windows, Android, and iOS, and has many functions for audio editing. A detailed manual can be found at <https://www.goldwave.com/goldwave.php>

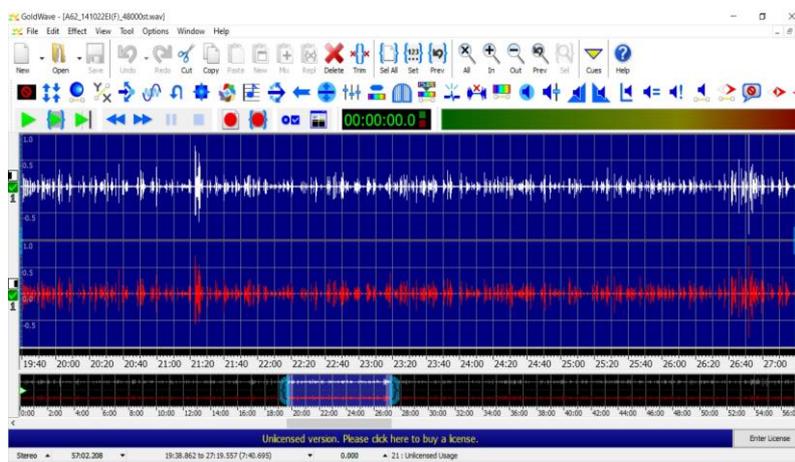


Figure 6.2. Screenshot of GoldWave (version 6.55)

6.2.3. Sound Forge Audio Studio

Sound Forge Audio Studio is also a commercial software product for audio editing. It runs on Windows and supports various audio formats. In addition to wide functionality and a detailed manual, it has a handy interface (in particular, arrow keys are used for zooming and Space vs Enter buttons for playing a recording from previous vs current position of the cursor).

See <https://www.magix.com/us/music-editing/sound-forge/sound-forge-audio-studio/>



Figure 6.3. Screenshot of Sound Forge Audio Studio (version 10.0)

Both GoldWave and Sound Forge Audio Studio have trial versions that allow users to become acquainted with the software before buying it. The approximate price of this kind of software is 50–70 USD for a lifetime license.

6.3. Software for phonetic analysis

There are two main pieces of software which are usually used by field linguists for the phonetic/acoustic analysis of data, namely Praat and Speech Analyzer. It is important to stress that these programs are valuable not only to professional phoneticians but also to all field linguists, because it is very rare for all collected data to be absolutely transparent from the phonetic point of view. Usually a field linguist needs some software to check different phonetic characteristics while making decisions on how best to transcribe something, for example.

6.3.1. Praat

Praat is a program for phonetic analysis that is currently the most popular among phoneticians. Despite the non-standard interface, it is rather easy to master thanks to the detailed manual. In addition to the basic functions (plotting a sound wave and a spectrogram, displaying the formants, intensity, fundamental frequency, pitch, etc., creating tiers for annotations), it offers a special language for writing scripts. The scripts allow for various measurements and functions to be programmed and thus make the phonetic analysis partially automatic. The program consists of one EXE file (its size is about 50 MB) that can be launched from anywhere and does not need a special installation. Praat runs on various operating systems including Windows, MacOS, and Linux.

You can download the program and read about its functions at <https://www.fon.hum.uva.nl/praat/>

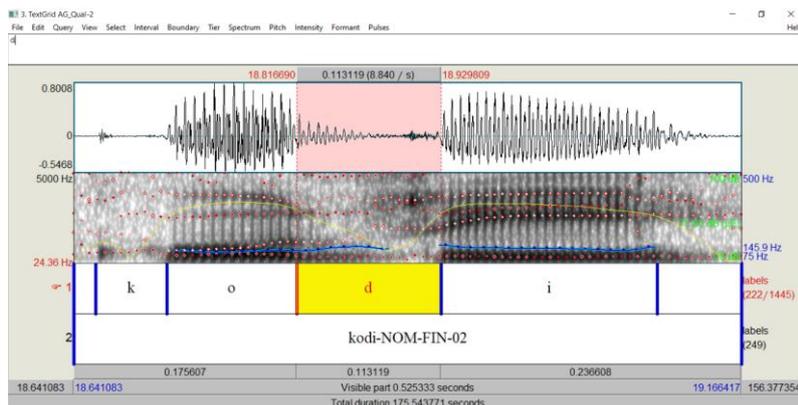


Figure 6.4. Screenshot of Praat (version 6.1.29)

6.3.2. Speech Analyzer

The Speech Analyzer software developed by SIL (Summer Institute of Linguistics) is also used for phonetic analysis. It was quite popular some time ago, but was mainly replaced by Praat that became more widely known. This software is no longer being developed (the last modifications were made in 2018). However, it is still used by many researchers. Speech Analyzer runs on Windows.

See <https://software.sil.org/speech-analyzer/>

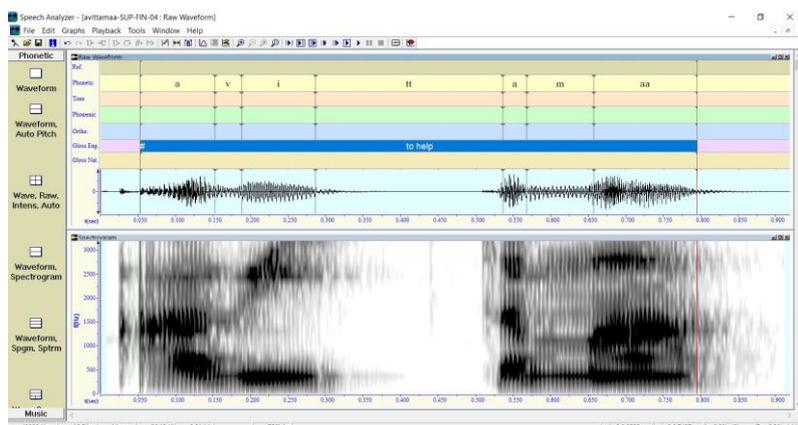


Figure 6.5. Screenshot of Speech Analyzer (version 3.1.0.148)

6.4. Software for video editing

It is considerably more difficult to choose a program for video editing than for audio editing. As explained above (see Sections 4.1.2 and 4.6), even the most simple operation with a video recording (e.g. cutting out an unnecessary piece) is performed by the editing software via a whole number of complicated steps. The original video file has to be converted into the program's inner format, and after the required operations have been performed, the inner format has to be converted into an output format. Every stage of this process can cause a loss in the recording quality.

There is no video editing software that is commonly used by many linguists. Every researcher chooses the program that best fits his/her tasks and returns the desired results. For this reason, I will not discuss the pros and cons of these programs in terms of their ability to create professional-quality video, but will only consider their basic functions. By basic functions I am referring to (a) re-coding the video file into a different format, and (b) making basic editing operations, such as cutting the files and putting pieces together, or extracting the audio track or adding a new one.

6.4.1. Handbrake

Converting video files to the required formats can be easily achieved using the open-source video transcoder Handbrake (see Figure 6.6). This program is free and runs on different operating systems: Windows, MacOS and Linux.

It supports most common video formats and allows various parameters of the target file to be set. Converting video files is a very time-consuming operation, and so Handbrake performs tasks by organizing files into a queue: when one file has finished being converted, the next file is processed automatically.

More detailed information about this software, its functions and its versions can be found here:

<https://handbrake.fr/docs/en/1.0.0/introduction/about.html#:~:text=HandBrake%20is%20an%20open%2Dsource,to%20MP4%20or%20MKV%20format.>

Handbrake can be downloaded from <https://handbrake.fr/>

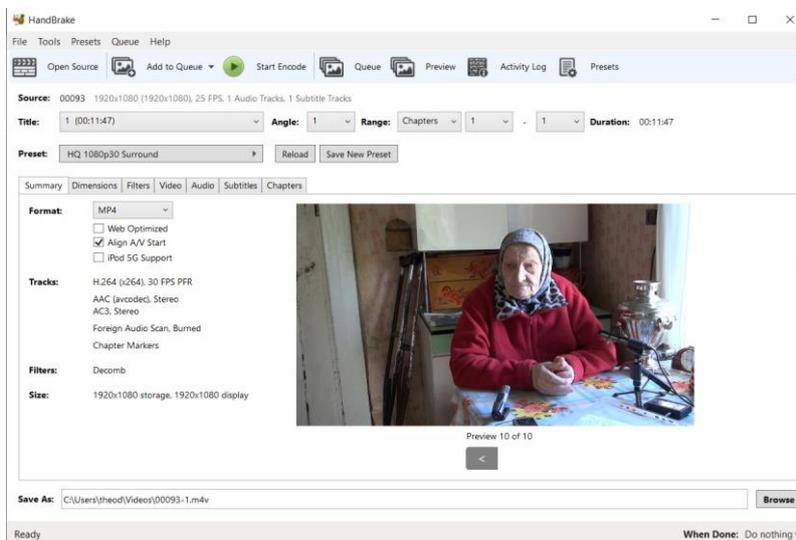


Figure 6.6. Screenshot of Handbrake (version 1.3.3)

6.4.2. Avidemux

Avidemux is a free and open-source video editor, which allows all basic operations to be carried out, including cutting and copying sections of video, extracting or adding audio tracks, and saving video in different formats. It runs on many operating systems including Windows, Linux, and MacOS.

See details here: <http://avidemux.sourceforge.net/>

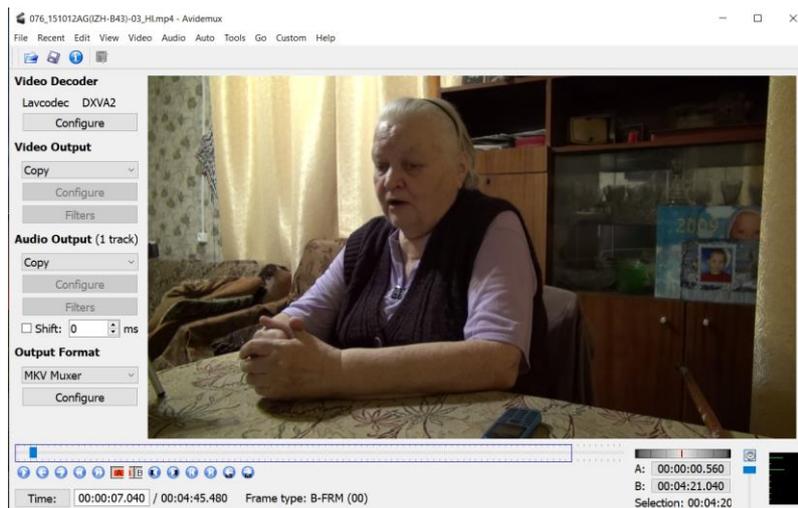


Figure 6.7. Screenshot of Avidemux (version 2.7.8)

6.4.3. VEGAS Movie Studio

VEGAS Movie Studio was developed by the same companies that developed Sound Forge Audio Studio (originally by Sonic Foundry and Sony Creative Software, and now by MAGIX). It is a powerful tool that has a user-friendly interface (the more advanced version of this software is VEGAS Pro). There are several different versions of VEGAS Movie Studio that differ in functionality and price. Usually the price varies from 70 to 150 euros, although this product is often on sale. A trial version is freely available.

VEGAS Movie Studio runs on Windows.

<https://www.vegascreativesoftware.com/us/vegas-movie-studio/>

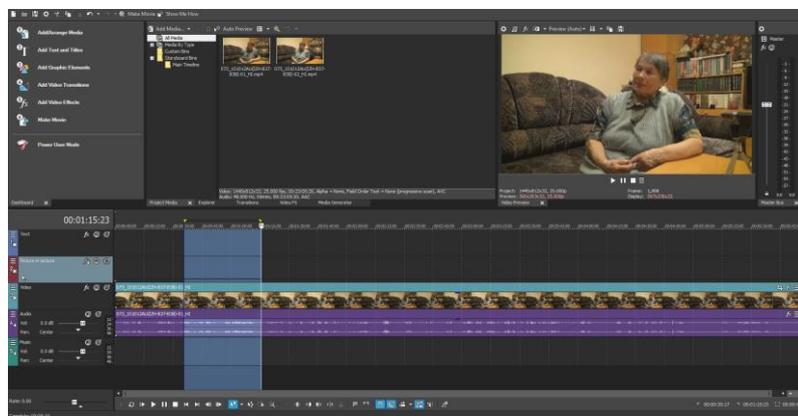


Figure 6.8. Screenshot of VEGAS Movie Studio (version 17.0 Platinum)

6.5. Software for processing and storing linguistic data

The types of software described above are represented by programs that have more or less similar functions. In this section, I discuss pieces of linguistic software that are aimed at specific tasks under the general goal of processing linguistic data and storing processed data. ELAN is a program for creating and storing various kinds of linguistic annotations which are time-aligned with media files. FieldWorks is a powerful tool for annotating texts in a multilinear format (that is a standard in contemporary linguistics), and generating automatic morphological parsing of speech samples. TranscriberAG and Transana are programs for creating transcriptions for media files. TshwaneLex and WeSay are software products for compiling dictionaries.

6.5.1. ELAN

ELAN (<https://www.mpi.nl/corpus/html/elan/>) is a program aimed at displaying the original audio and video recordings time-aligned with various annotations. An annotation may be a transcription, translation, morphological glosses, comments, and so on. Annotations are placed on tiers (a line for each tier), and it is up to a user to decide how many and which tiers s/he wants to create, how to name them, what the dependencies between the tiers will be, the order of the tiers, etc. Different types of tiers can be chosen to store different kinds of data.

If more than one media file exists for a single session (e.g. there is a video and audio recording), they need to be synchronized.

There are several ways to display annotations. One view shows each tier on a separate line, so you can see several tiers simultaneously but only for a short time interval (see the lower part of the screen in Figure 6.9). Another view displays annotations from the same tier on many lines, so you can see a bigger time interval but only for one tier (see the upper right section of the screen in Figure 6.9).

ELAN is a very convenient program for storing processed linguistic data. The annotations created in ELAN are stored in a separate file, while the media data (audio and video) are kept separately.

ELAN offers various searching possibilities both within one file and across any set of ELAN files. Some linguists use it already for the initial processing of the recording: they transcribe the recording directly in ELAN, add translations, morphological annotations and so on.

An important advantage of ELAN is that the annotations from it can be exported to FieldWorks software and back. It is possible to transcribe a text in ELAN, convert it to FieldWorks, generate the automatic morphological parsing and add necessary annotations in FieldWorks, and then import the text back into ELAN for storing and compiling a language corpus.

The ELAN software is free to use and runs on Windows, MacOS, and Linux.

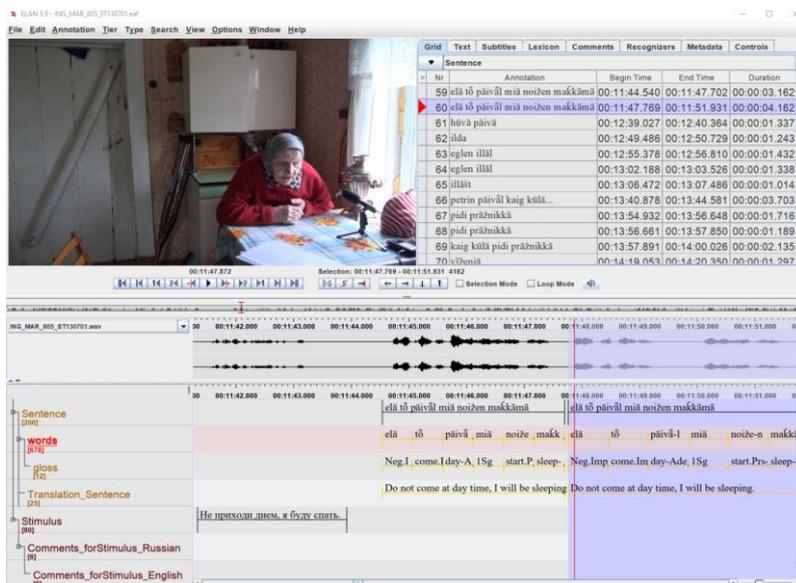


Figure 6.9. Screenshot of ELAN (version 5.9)

6.5.2. FieldWorks

FieldWorks (FieldWorks Language Explorer or FLE_x) is a powerful multifunctional software product for working with linguistic data. It allows users to create text collections and dictionaries. Speech samples are presented in FLE_x in a multilinear format familiar to

linguists. By creating a lexicon containing both root and non-root morphemes and setting grammar rules, a linguist can make it work like a morphological parser, which is very useful when a voluminous collection of texts need to be morphologically analysed (glossed).

FLEx supports the exchange of data with ELAN (see 6.5.1) and WeSay (6.5.7).

FieldWorks is free to use and runs on Windows and Linux.

See details here: <https://software.sil.org/fieldworks/>

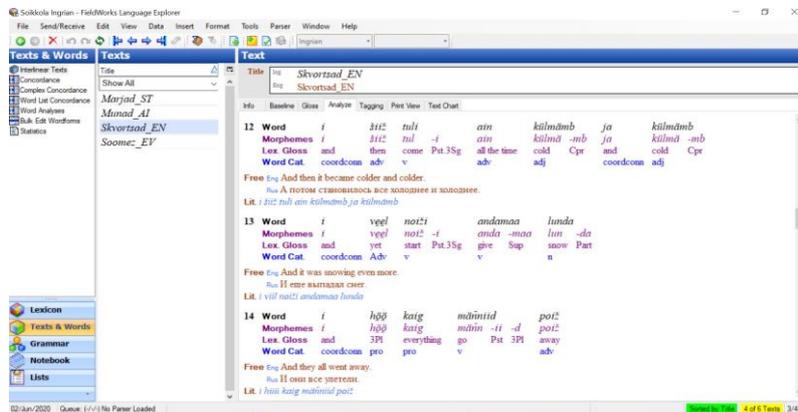


Figure 6.10. Screenshot of Fieldworks (version 8.3)

6.5.3. Toolbox

As with FLEx, Toolbox is a software product for parsing and interlinearizing texts and for creating lexical databases. Though FLEx appeared later than Toolbox and has better functionality, many linguists prefer using Toolbox which was already used for many earlier projects. Unlike FLEx, Toolbox has transparent file formats, so Toolbox data files can be easily converted to other formats.

This software is free to use and runs on Windows, MacOS, and Linux.

See <https://software.sil.org/toolbox/>

6.5.4. TranscriberAG

TranscriberAG is a free software product developed for annotating media files. It supports various audio and video formats and can work with long files (up to several hours). Its useful feature are the keys intended specifically for this type of work: by pressing Esc you can start or pause a recording and by pressing F1 or F4 you can rewind or fast forward, respectively, 3 seconds of the recording. The typed annotations can be saved in several formats including TXT.

This program runs on Windows, MacOS, and Linux.

See details at <http://transag.sourceforge.net/>

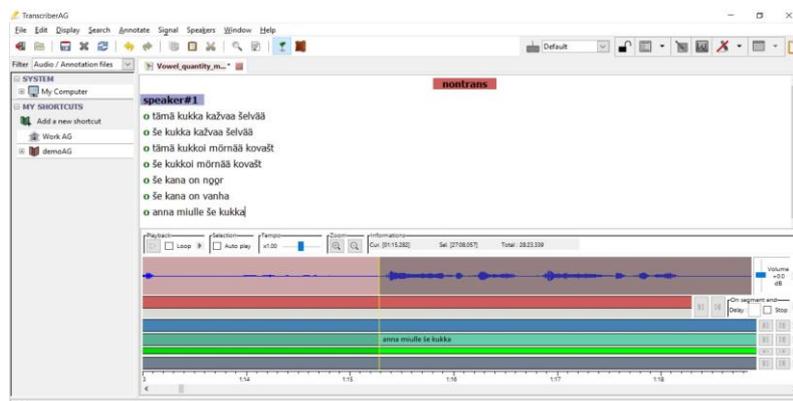


Figure 6.11. Screenshot of TranscriberAG (version 1.6.0)

6.5.5. Transana

Transana is a powerful tool for transcribing media files. Its professional version can work with several simultaneous videos and supports several layers of transcription (e.g. you can make parallel transcriptions for text and gestures). The basic and professional versions cost 150 and 350 USD per single-user licence, respectively.

This software runs under Windows and MacOS.

See <https://www.transana.com/>

Besides TranscriberAG and Transana, there are many other computer programs for creating transcriptions for video and/or audio files, including SIL Transcriber, Advene, ClipFlair Studio, Easytranscript, Transcription Aid, and Listen N Write.

6.5.6. TshwaneLex

Tlex (TshwaneLex) is a powerful professional software tool for compiling dictionaries, with a user-friendly interface. The program has many customisation options both for the user interface and the resulting dictionary. The search and filter options are very useful for working with a dictionary. The data in this program can be exported to files of different formats. The main programme is supplemented with additional software for working with terminology bases and corpora. The price is 181.50 euros (including VAT).

It runs on Windows and MacOS. See details here: <https://tshwanedje.com/tshwanelex/>

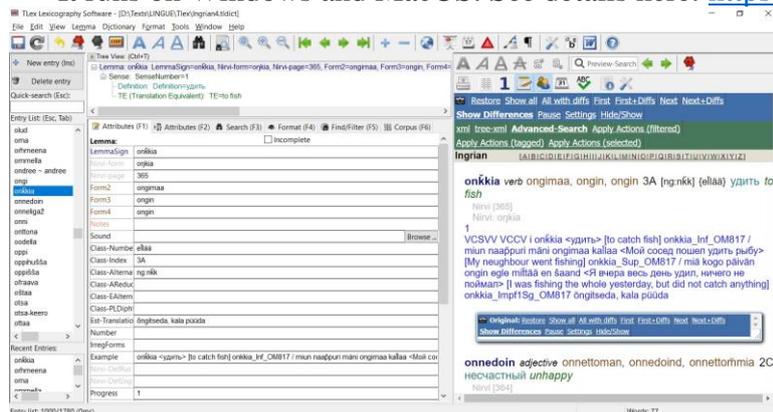


Figure 6.13. Screenshot of Tlex (version 12.1.0.2862)

6.5.7. WeSay

This software is developed by SIL for compiling dictionaries as a team. It can be especially useful if this team consists of an experienced linguist and several native speakers. The linguist makes all the preliminary customizations and the native speakers are then able to enter lexical data in a very simple way that does not require a detailed understanding of the software. WeSay allows audio clips to be added to lexical entries.

This program supports the export of data to FLEx and import of data from FLEx.

See details here: <https://software.sil.org/wesay/>

6.6. Software for storing metadata

6.6.1. SayMore

SayMore is a tool used to organize various linguistic data collected in the field and to add the appropriate metadata. The data organized with the help of this tool can be easily converted to the IMDI metadata standard.

The description of SayMore notes: “As a Language Documenter, you quickly amass a large number of source recordings and artifacts based on them. You need to manage those

recordings, document informed consent, transcribe, translate, enter metadata, and, finally, submit to a digital archive. Along the way, you need to keep all these files well organized and labeled. You'll want to keep track of the goals of the project in order to emerge with the desired coverage in areas such as genre, spontaneity, and the social roles of the speaker. You will need some help keeping track of where each session is in your workflow. SayMore can help with all that.”

SayMore is free to use and runs on Windows.

See <https://software.sil.org/saymore/>

6.6.2. Lameta

Lameta is a relatively new and developing software product that is designed as a tool for organizing data and metadata. Its description says: “Lameta greatly simplifies management of collections and makes the archiving process straightforward and painless for field workers.” This software appeared as a result of a collaboration between field linguists and the ELAR archive.

Lameta is a free-to-use, open-source program that runs on Windows and MacOS.

It can be downloaded from <https://github.com/onset/laMETA/releases>

For more details see <https://sites.google.com/site/metadatatooldiscussion/>

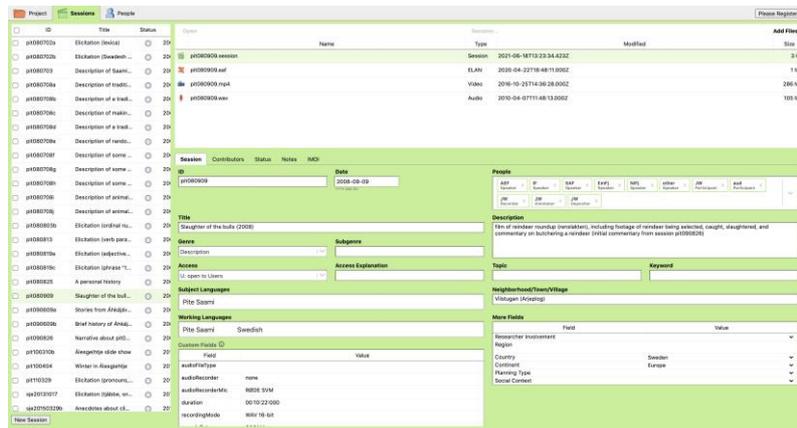


Figure 6.14. Screenshot of Lameta

6.6.3. Arbil

Arbil is a metadata editor. Its web page says that this software supports different metadata standards but the instructions that come with the latest versions only mention CMDI. A detailed manual is provided with the program. However, this program is no longer being developed or actively supported and the latest versions are dated 2015 and 2016. This software runs on Windows, MacOS, and Linux.

See <https://archive.mpi.nl/forums/t/arbil-information-manuals-download/1045>

There are many other metadata editors, e.g. CMDIMaker, ExSite9, etc. However, some of them are no longer developed and are already outdated.

6.7. Software for renaming files

The researcher may need to rename multiple files (e.g. when preparing files for archiving). Many renaming operations can be done with the Multi-Rename Tool in Total Commander (see <https://www.ghisler.com/index.htm>). However, for more complicated operations you may need an advanced program, such as Advance Renamer, a free software product which runs on Windows. See <https://www.advancedrenamer.com/>

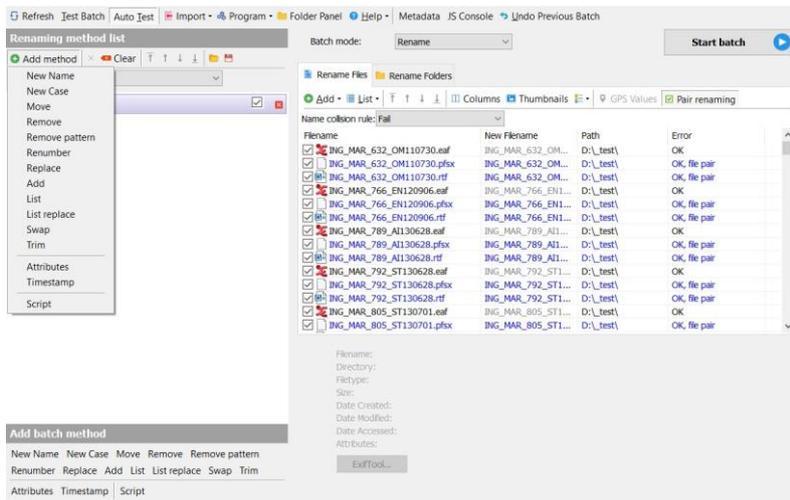


Figure 6.15. Screenshot of Advanced Renamer (version 3.87)

Chapter 7. Ethics

- 7.1. Why ethics?
- 7.2. Main rules and principles
- 7.3. Most common ethical problems
 - 7.3.1. Payment
 - 7.3.2. The researcher's welfare
 - 7.3.3. Maintaining a professional distance
 - 7.3.4. Consuming alcohol
 - 7.3.5. Native speaker's relatives
 - 7.3.6. Authorities and the language community
 - 7.3.7. Taboos
 - 7.3.8. Legal issues
 - 7.3.9. Anonymisation
 - 7.3.10. Dissemination of field results in the language community
- 7.4. Main actions that will help you to avoid ethical problems

7.1. Why ethics?

The question “Why ethics?” is similar to the question “Why is it better to do good things than bad things?”. The most correct answer to such questions is “because we are human”. However, this does not mean that such questions do not also have more pragmatic answers. Ethics is needed to establish good relations with the language community. Breaking ethical rules can make future work with members of the community impossible, and not only for one researcher, but probably for other researchers too. Even a single inappropriate episode can prove disastrous.

In 2006, when I started working on the Ingrian language, I managed to establish good relations with one of the younger fluent native speakers (such people are exceptional, because almost all fluent Ingrian speakers were born before the Second World War). She refused to work with other people because some Finnish researchers had previously recorded her without her consent, and so she had become very angry and decided to stop working with all researchers. Unfortunately, the period of my good relations with this speaker was rather short. Someone (I do not know who it was) called her and said that I gave him her phone number. It was a complete lie (I did not give her phone number to anybody) but she became angry with me and the unique chance to have a younger language consultant was lost.

This example shows that breaking basic ethical rules is destructive for fieldwork. In this chapter, I will discuss the most typical ethical issues and I hope that this discussion will be useful in situations requiring a correct decision on the part of the researcher.

7.2. Main rules and principles

(a) Ethics is society specific

There are no “universal ethics”. Every culture has its own ethical principles that can be different from the principles of other cultures. It is the task of the researcher to understand the culture and ethical rules of a particular community where (s)he conducts his/her fieldwork. A particular challenge is that the rules of the community do not cancel the ethical rules of the researcher's own society, so (s)he has to follow the rules of at least two different cultures. If

there is a contradiction between these rules, the researcher should make a choice which can be very difficult to do.

The Department of Theoretical and Applied linguistics of Lomonosov Moscow State University organized many field trips to Dagestan. There were many participants on these field trips (often more than 20) and most of them were students. In 1992, one of the participants was a guy who was Dagestani himself. He did not hide this fact from the local people, and wanted them to consider him as one of them. The expedition had its own system of duties for all participants. In particular, every day two girls and one guy were on kitchen duty. One of the main responsibilities of the male person on duty was to bring water, which flowed in a thin stream from a rather distant spring on a mountain slope. When it was the Dagestani guy's turn to be on kitchen duty, he was really confused, because bringing water and mopping the floors was exclusively women's work in Dagestan and a man doing such work would not be considered as a man from the point of view of the local community. However, his attempt to avoid this work failed. The girls from Moscow did not want to live according to Dagestani standards and insisted that the guy do the necessary work.

Ethical rules may concern various aspects, e.g. clothes, smoking, alcohol, or expression of politeness.

As a student, I once travelled throughout Russia with my friend. We arrived at a republic where the native people were mostly Muslim and went to look at a beautiful mosque. An old man (possibly an attendant from this mosque) came to us and looked at us suspiciously. Though the common object of interest (and negative attitude) were my torn jeans, he did not pay any attention to them, but stared at my friend's shorts and asked him: "Are you not afraid that your private parts will drop out?". At this point I realized that in this culture wearing shorts was a much more unacceptable behaviour than wearing torn jeans.

Though most local people will understand that a researcher has come from a different culture and cannot be aware of all the principles governing local behaviour, it is better to minimize the number of situations where the researcher breaks some basic principles of the community. The researcher should study the culture where (s)he works and consult with community members in order not to make ethical mistakes.

(b) The native speaker is a human and not just a source of information.

Though the main goal of a field trip is collecting data, the researcher should realize that the native speaker has his/her own values, problems and interests, and the researcher must respect them. Productive fieldwork should be based on human relations, not on purely business relations. No matter how important the task might be for the researcher, it does not look the same for the native speaker.

(c) Develop collaborative partnerships with native speakers

The most productive fieldwork is when all participants (i.e. the researcher and the native speaker) consider it to be a mutually beneficial collaboration. It is the responsibility of the researcher to cultivate the idea of collaboration. One possible scenario that can be explicitly formulated is "a teacher (the native speaker) is giving a lesson to the student (the researcher)". At the same time, the researcher should train the native speaker and develop his/her skills as a language consultant.

(d) Collaboration with speakers should be mutually beneficial

The benefits for the researcher are evident, as (s)he gets the required linguistic data.

What are the benefits for speakers? Potentially there are many:

- the researcher's interest in the speaker as a person (life in a village can be rather boring especially for older people with limited mobility, so communicating with a newcomer might be a pleasant change);
- the researcher's interest towards the culture and the language (many people from minorities feel uncomfortable because they are often disregarded or considered as second-class citizens; interest in their culture and language may be of great significance to them);
- the possibility to talk to someone in their native language (in the case of a highly endangered language, this may be a rare opportunity);
- payment for work as a language consultant and/or for other services, e.g. accommodation (the questions concerning payment are discussed in detail in Section 7.3.1);
- gifts (both symbolic gifts and more useful gifts are valuable);
- help with work around the house: bringing water, writing a letter, giving a lift in a car, setting up a TV set, etc. (this kind of help will normally be with elderly people for whom some actions, that look simple at first glance, can be really challenging);

Situations when you can help a native speaker arise very often. For example, I remember that once I visited a Votic speaker (a very elderly woman) who was very depressed because her TV remote control did not work: the batteries were dead. For her it was a real tragedy, since watching TV was her main source of entertainment. As I had some spare batteries in my bag, I was able to replace the batteries in the remote control. She was incredibly happy.

- the researcher can buy food, clothes, medicine, etc.;
- the researcher can later send photographs with the native speaker and/or his/her relatives taken in the field;
- the researcher can send letters or postcards as a sign of attention;
- and so on.

And of course, anything the researcher publishes may be of great interest and value to the native speaker and/or the language community in general (see Section 7.3.10).

(e) Do no harm!

There are many actions that can be harmful for the native speaker. Some actions bring slight discomfort, but others can endanger the health and even life of the native speaker (this primarily concerns elderly people). The researcher should understand that a field session, which is routine work for him/her, may be very stressful for the native speaker who is not used to having visitors from a big city or from a foreign country.

The researcher should not:

- overburden the native speaker with work;
- visit when it is not convenient for the native speaker;
- promise to come for 5 minutes and stay for 5 hours;
- demonstrate disrespect or contempt;
- make the native speaker feel as if (s)he owes something to the researcher;
- make the native speaker do something that (s)he does not want.

(f) Information can be harmful

When preparing a publication, the researcher should be careful. It is not good:

- to portray the community negatively;
- to publish something that the speaker did not want to be published;
- to violate the speakers' or other people's rights.

To avoid such situations, the researcher should ask the native speaker for his/her opinion on ambiguous matters and when possible ask for permission to publish any materials that contain sensitive information.

In a conversation with the native speakers it is not good:

- to mention the attitudes and opinions of native speakers about each other;
- to express your own opinion about native speakers (in particular, of their language competence). This mainly concerns negative opinions, but to some extent it applies to all emotional evaluations.

In Section 2.2.2, I have already mentioned the ethical problems that can arise while transcribing spontaneous speech samples recorded from one native speaker with the help of a different speaker. With this data collection method, the researcher should be careful not to provoke negative reactions. Such reactions can appear if:

- the text contains personal evaluations or any subjective views;
- different speakers have different attitude towards the “correct” language;
- the narrator does not get along well with the person transcribing his/her speech samples.

To avoid this, I would recommend asking for permission to transcribe the narratives with a different person. If there is no such possibility, I recommend consulting with a native speaker with whom the researcher has a trusting relationship and ask his/her opinion.

(g) Ask for informed consent

The basic activities of the researcher – recording and publication of data – must be permitted by the native speaker. The most reliable way to ensure this is the case is to ask the native speaker directly and get documented confirmation of this fact (this can be either a signed form or recorded consent). The native speaker has to understand what (s)he is consenting to, and it is the responsibility of the researcher to explain it.

However, I think that the requirement to obtain informed consent, which is advocated by many institutions, is aimed at protecting universities and/or researchers rather than native speakers. In some cultures, the contemporary way of getting informed consent (i.e. signing an agreement) can look unnatural. For example, in Russia, where many people are used to mutual agreements and do not trust the “papers”, older native speakers can be worried or even stressed if someone asks them to sign a strange paper. In such situations the researcher should be flexible and find an alternative which is the most appropriate from the point of view of the native speaker. For example, the consent can be given verbally and recorded with an audio recorder. Alternatively, it can be combined with the agreement for payment – such agreements look much more natural than a separate letter of consent.

(h) Make fieldwork sessions comfortable for the native speaker.

I strongly recommend (especially when working with older speakers) to monitor the native speaker’s ability to work and check that (s)he is not tired. It is also good to state explicitly that the native speaker is able to inform the researcher whenever (s)he is tired. If the native speaker feels that the work is tiring but has no way to stop it, it is likely that (s)he will not agree to work with the researcher again (and maybe not with his/her colleagues either). It is useful to take breaks during a field session and to allow the native speaker to rest. How often and what kind of breaks should be taken depends on the particular speaker.

When communicating with native speakers, it is important to react positively to their responses. I know of some cases where a researcher reacted negatively, e.g. expressed distrust or unpleasant surprise, which made the native speaker feel uncertain and uncomfortable. Even if you hear something that sounds absurd or completely incorrect to you, it is better not to show your negative feelings but to focus on checking and analysing the suspect data. On the contrary, any reactions which portray the researcher’s interest in the communication with the native speaker and the data obtained from him/her are very welcome.

Twenty years ago and earlier it was typical to visit native speakers in a village without a preliminary agreement, because in many villages there was a single phone in the post office or in some administrative office, and there were no other convenient means of communication. Now most settlements have access to the mobile network, and most people including the older generations have mobile phones. It is therefore possible to make a preliminary arrangement for a researcher's visit and agree upon a convenient time for the native speaker.

Researcher G. arrived, with her friend, to work with an Ingrian native speaker without a preliminary agreement. The native speaker – a woman of about 80 years of age – was one of the most enthusiastic and motivated consultants, but this time she was busy and was not able to work. When she refused to work with the unexpected visitors, instead of leaving and/or making an appointment for a future visit, they started to reproach her for her unwillingness to work, and said that it was her duty to work with them. She was very frustrated and even shocked by these inappropriate accusations.

This story is an example of inappropriate behaviour of the researcher. Under normal circumstances, communicating with the researcher should not give rise to any negative emotions in the native speaker.

(i) Make your work transparent

As long as the speaker does not understand what you are doing, you may be considered as a suspicious stranger. If the speaker understands your goals and your methods, (s)he respects your work. Thus, it is important to explain what you are doing. This concerns both the global goals and the task of a particular session. For example, you can explain that you want to write a grammar, compile a dictionary, or make a text corpus, or even just to learn the language. For describing a particular session, you can give a more detailed explanation. For example, you might say something like: "I would like to record how particular words sound. I'll give some sentences for translation and record these translations. So now it is important to maintain a natural tempo of speech. Please do not hurry and pronounce everything as you usually pronounce it" or "I would like to know different forms of some words. So I will give you sentences where the same words are repeated but every time they will have a slightly different shape".

It is also worth describing the workflow. For example, it is not obvious for a person who is not a linguist that it may take many years to compile a dictionary or to write a grammar, so wrong expectations may arise. To avoid this, it is best to explain your plans and work schedule in advance.

The principle issue concerning transparency is the process of recording. I strongly recommend against any form of covert recording, which is considered to be completely unethical by contemporary standards. Covert recordings do not usually offer many benefits and in most cases it is not difficult to get native speakers used to an audio recorder, and soon their behaviour and speech will become completely natural. At the same time, if a native speaker discovers that (s)he is being covertly recorded, it will make him/her angry and (s)he will refuse to be a language consultant forever. Other speakers in the community will quickly learn of this inappropriate behaviour and this researcher (and possibly other researchers) may become persona non grata in this language community.

(j) Do not impose your problems on native speakers

Native speakers should not have to understand the problems of the academic community. Thus, it is better not to discuss these problems with native speakers. Do not tell him/her that you are paid a low salary, have so many deadlines, have to write reports, have difficult

relations with your colleagues, and so on. A person who is not part of the academic world can easily misunderstand your words in unexpected ways. Besides, listening to someone complaining about things is not very inspiring, and if the native speaker decides that the researcher has come mostly to whine it may spell the end of the fieldwork.

(k) Do not forget the ethics within the academic community

Though ethical rules in the academic community are not directly related to field trips, it is still important for the general success of the fieldwork activities. I do not want to discuss this topic in detail, instead I will just remind the reader about several principles:

- do not forget about the authorship and only publish the materials that you have collected yourself, or ask other authors for permission to use their materials;
- do not forget to acknowledge your colleagues;
- work with your colleagues as a team and not as rivals;
- share your field experience with other colleagues.

7.3. Most common ethical problems

In this section I will discuss several problems that are very typical and require a more detailed discussion.

7.3.1. Payment

Paying language consultants is one of the most controversial problems in fieldwork. One can find a wide spectrum of opinions on this problem, starting from the idea that paying money is a bad thing right to the opposite extreme of paying for any form of communication with language consultants. This problem arises because of differing attitudes to money both across cultures and between individuals (including both the language consultant and the researcher).

In 2003, an expedition organized by the Russian State University for the Humanities visited the Adyghe Republic of the Russian Federation. The estimated budget for paying language consultants was calculated on the basis of experience from previous expeditions to other republics of Russia, including Mari El and Komi. In Mari El and Komi, the language consultants did not discuss financial issues and were very glad to receive some money at the end of the expedition. In Adyghe, the native speakers asked about the rate of pay before starting work and said that this rate was not appropriate and it would need to be two times higher. Over the course of the expedition they carefully checked the number of working hours in the register and accurately kept their own accounting records.

There is no universal principle that helps to solve the issue surrounding payment. Every researcher should develop his/her own strategy, depending on the circumstances of the field work. However, there is a list of recommendations that may help one to find the right solution. The general idea is that payment should result in fieldwork that is more productive, not less so.

There are many pros and cons of paying language consultants. The main positive sides are:

- additional motivation to work;
- structuring of the working relationship: very often language consultants are more responsible and accurate when they are being paid for their time;
- the hardest types of work (e.g. recording of hundreds of paradigms) that cannot be considered as just a pleasant conversation get compensated;
- many people living in small villages have real financial needs and even a small amount of money can be a significant help for them.

The main negative sides are:

- the potential commercialisation of the relationship with native speakers;
- some native speakers will no longer agree to work without payment or for a small amount of money, and this can create problems for colleagues who do not have enough money in their fieldwork budget;
- other local people may be jealous if the researcher did not work with them or paid them less;
- often the money earned is spent on alcohol or the like.

Taking into account all these factors, the researcher should make a decision that is appropriate to the context at hand.

While working with Votic and Ingrian native speakers, I decided upon the following rules concerning payments: (a) ongoing work is always compensated but ad-hoc sessions are not; (b) payment is made once per year according to the amount of data recorded from a particular native speaker; (c) I always stress that it is not my money and the payment is made by my university (in fact, it was not always so). This helped to avoid a strong association between every particular session and money (i.e. commercialisation) and helped when a language consultant had reservations about receiving the money (I would say: “The university allocated this money for you, I cannot take it.”); (d) I always prepare a receipt that should be signed by the language consultant; (e) the rate of payment should be appropriate from the point of view of the native speakers; (f) I keep a record of all payments that I make.

7.3.2. The researcher’s welfare

In the majority of cases fieldwork is done in rural areas, so the living standards are not the same as in towns. If a researcher from a western country comes to a developing country, his monthly salary may be the same as the annual salary of the local community members (sometimes the difference is even greater). Even if (s)he considers his income to be modest, in the eyes of the local people (s)he can seem like a very rich man/woman. It may be a shock for a researcher to realize that some of the native speakers who seem particularly friendly are actually interested in his/her money. Another unpleasant situation is when the researcher’s money and/or equipment are stolen (sometimes by his/her “friends”).

It is difficult or maybe impossible to avoid this problem completely. However, it is possible to take some precautions. The main rule is that the researcher should not demonstrate his financial state. In particular,

- do not wear expensive clothes;
- do not talk about grants that you have got;
- do not mention the price of your equipment (in case of direct questions, one possible answer is: “I do not know, I borrowed this equipment from my university”);
- do not give money to local people without reason;
- do not buy expensive things in the local shop;
- do not give expensive gifts;
- do not wear jewellery.

In 2001, the Russian State University for the Humanities organized an expedition to the village of Kazanovka in the Republic of Khakassia. One day several participants went to swim in the river. On their way they met a guy who had just got out of jail and come to this village with his friends. This guy noticed a gold chain around the neck of one of the girls and, being drunk, later came with his

friends to the local school, where the members of the expedition were staying, broke the window, threatened the participants of the expedition and demanded the gold chain that he had seen.

I also strongly recommend not leaving your equipment or other valuable things in the open, but hiding them in a safe place.

It is not uncommon for native speakers to ask the researcher to give them money. I do not recommend agreeing to this because it is likely that this situation will then become an ongoing one. The researcher should think of a clear explanation as to why (s)he cannot give or lend money. For example, (s)he might say that all the money (s)he has belongs to his/her university and all expenses should be confirmed with a financial document.

7.3.3. Maintaining a professional distance

When communicating with language consultants you should maintain a professional distance, but not be aloof. Neither of the following two extremes is good:

- to show that you come from a “different world” and to stress that you live a totally different life (no one will trust you in this case);
- to behave as a ‘pal’: in this case the language consultants may forget that you came with professional purposes and you will have problems organizing a systematic working arrangement.

Of course, the exact behaviours which correlate with maintaining an appropriate professional distance will depend on the particular situation in the field.

Every culture has its own views about relationships between sexes. You must keep those in mind and behave accordingly. If you are not intimately familiar with the cultural norms, never establish an overly personal relationship (especially a romantic one) with your language consultants or other local people: doing so could spell the end of your work.

7.3.4. Consuming alcohol

The problem of excess alcohol consumption can be especially acute in minority communities (see Zamjatin, Pasanen, and Saarikivi 2012: 29–30 who discuss a correlation between language shift and alcohol abuse). It is best not to drink alcohol with local people at least until you have established good relations with them and understand the local practices. This principle may not be obvious because drinking together may seem like a good way to be considered a friend. One way to deal with this problem is to say at the very beginning that you do not drink at all. Usually, this works; local people may consider it odd, but accept it. On the contrary, once the researcher starts to consume alcohol with local people, it is almost impossible to stop it in the future, since a refusal will be taken as an offence. I should stress that saying something like “My physician forbade me from drinking alcohol” does not work in societies that do not hold modern medicine in high regard (this is particularly the case in Russia). If possible, you should ask experienced researchers what type of refusals look appropriate in a particular society.

At the beginning of the 1990s, the spread of Islam in Dagestan was relatively low and it was common for members of linguistic expeditions and the local people to drink together. One of the typical excuses for a female student not to drink at a party was that she is the younger sister of one of the male participants of the expedition, and according to our rules a sister cannot drink in the presence of her brother. This explanation was absolutely acceptable to the local people.

If you nevertheless decide to have a drink with the native speakers, it is important to be aware of whether any of the native speakers have a drinking problem (in particular, if there is a chance of them becoming aggressive, unable to stop drinking, etc.).

The researcher should bear in mind that the quality of local alcoholic drinks can be far from what (s)he is used to. This concerns both drinks bought from the local liquor store and homemade drinks (some of them are OK but some of them can be of poor quality). Without having appropriate experience, it is better not to take risks.

I strongly recommend against female researchers drinking in exclusively male company.

In general, if you start to drink with local people you should be prepared for surprises.

While visiting Votic and Ingrian villages we usually did not drink with local people but sometimes there were exceptions. One of our Votic language consultants – an elderly woman – always cooked some food and served us a meal. Usually there was a bottle of vodka on the table (she drank very little but encouraged us to drink). The recording session started after the meal. During one of the visits, the vodka seemed to me to be much stronger than usual. At the end of the session, the native speaker told us: “I should tell you that I had a problem: I had only an open bottle of vodka, and since it is impolite to put a bottle that is not full on the table, I filled it up with a pure spirit”.

7.3.5. Native speaker’s relatives

Most native speakers have relatives who live with them or come to visit. The attitude of these relatives to the researcher visiting a native speaker can be very different. I encountered a whole spectrum of reactions from very positive and helpful through to completely indifferent to strongly negative and even aggressive. Of course, it is great when the relatives have a positive attitude towards the researcher because they understand the importance of fieldwork with minority languages. If the native speaker is old, his/her children often help in organizational matters. The researcher can call them to make an appointment, and they can inform the researcher about the state of health of the native speaker, and so on.

There may be various reasons for negative feelings towards the researcher: a negative attitude to strangers in general, concern about the health of the elderly person, jealousy (especially if the relative does not know the language of his (grand)parents), etc. Due to these reasons, relatives sometimes prevent the researcher from working with the native speaker.

It is advisable not to ignore the relatives and to try to establish good relations with them, as this can make future work run much more smoothly. The methods of establishing such relations are obvious: speak with the relatives, explain to them the essence of your work, be polite, if possible make them feel like participants in the process rather than some undesired appendage to the native speaker. Some small gifts can also be helpful in this regard.

7.3.6. Authorities and the language community

If you work in the field, it is good to establish positive relations with the local authorities. First, they can help you in various situations. Second, local authorities are often suspicious about strangers. It is worth explaining to them the goal of your visit to the community. I would recommend having an official letter from your university, which explains the goal of your work and confirms that you have only academic interests.

A complicated situation may arise if there is a conflict between the local authorities and the language community. In this case it is better not to get involved in the conflict. It is worth declaring explicitly that your interests are purely academic and not political. However, if you identify an appropriate way to defend the interests of the language community, you can try to help.

I strongly recommend avoiding any collaboration with political parties or secret services that show an interest in your activities in the field. They might try to make you a spy or an influencer. The best behaviour in such a situation is to say “no” immediately because it will be much more difficult to say “no” later. This “no” should sound polite but very definite. You can say: “I am sorry, but it is not my job”. If they ask you to collect some information and justify it by saying it is an important task for the country or society, you can always answer: “Of course I will inform the police if I notice any criminal activity” and thus make them understand that you are not going to collect information about activities that look illegal only from their point of view.

7.3.7. Taboos

Many cultures have some knowledge (usually sacral) that is not intended to be passed to strangers. Do not try to obtain this knowledge by force. First, most probably you will fail, and second, it will damage your reputation. It is better to wait until the community starts treating you as one of them and then you may find they grant you access to sacral information.

7.3.8. Legal issues

Legal issues are among the most complicated. First, there are laws at different levels, for example there may be laws at a national level (federal laws), laws of higher institutions (e.g. European Union laws or international laws), local laws (of a particular region or city), etc. These laws may complement each other or even contradict each other. There are many situations where, as a lay person, you may not understand what is legal and what is not. Second, if the researcher works in a foreign country, (s)he may be the subject of law both in the country (s)he is working in and in his/her own country. Third, it is not enough to know the laws, it is also necessary to know how they are applied in practice. It is important to realize in general how the system of law enforcement and the corresponding authorities work. For a researcher from a country with the rule of law, it is often very difficult to understand how legal authorities work in a country where the law is applied less reliably. An example is often much more informative than theoretical arguments, so I will give an example from my own field experience.

In 2006, I organized the first expedition to work on Ingrian. It started with an unpleasant incident. When our group of seven people was changing trains in St. Petersburg, we were detained by a policeman. It so happened that a G8 summit was planned in St. Petersburg a week after the start of our expedition. Many policemen from the whole country had been sent to St. Petersburg in advance. The policeman who detained us came from Murmansk. He was told to detain all suspicious people, and a group of seven people with big backpacks seemed suspicious to him. I had an official letter from my institute saying that I was the organizer of a linguistic expedition and requesting that all state institutions provide whatever assistance might be necessary to successfully carry out this expedition. Unfortunately, this paper did not mean much to the policeman. There was chaos in the police department: the commanding officer of this department and the temporary commanding officer sent to this department in connection with the future G8 summit were in conflict. Each member of our expedition was interrogated and our fingerprints were taken. One policeman told me that the series number of my passport (Russian passports have a four-digit series and six-digit number) was the same as in the passport of some anti-globalist that they were afraid of. Soon enough it became clear to all policemen that we were of no

interest to them, but they could not let us go because they had already informed the FSB (Federal Security Service, former KGB). The FSB officers arrived after a while and checked our computers and equipment, but even after they left we had to wait while they were checking all of us against their databases. Altogether we spent six hours in this police department. As a result, I was given the phone number of the local FSB office in case we had any problems (fortunately I did not have the chance to use it), and an official letter from the police department saying that I was “of no operational interest”.

This example shows that sometimes it is impossible to avoid unpleasant incidents with the legal authorities. However, in order to reduce their likelihood, I strongly recommend consulting with colleagues who have experience of working in the region you are travelling to. You should be confident that you are not breaking any law.

7.3.9. Anonymisation

The growing attention to ethical issues has led to the formulation and publication of various ethical codes and rules. Many universities and other institutions have their own codes, and there are also some sets of rules which exist at a national or international level. Though this is a positive tendency, it brings with it some new problems. One of these problems is that often an ethical code does not distinguish different academic fields even though the context is so important where ethical matters are concerned.

The problem of anonymisation is a very good example. Some ethical codes require the researcher to anonymise all participants in his/her research. This makes a lot of sense for fields such as biology or medicine, as research in these fields typically involves people as a source of data which are physical or material in nature, as opposed to linguistic data which are of an intellectual nature and are therefore focused on a particular person and their individuality. Also, having some rare disease, or belonging to a specific genetic haplogroup or having skin of a particular pigmentation, for example, are not things about which people feel pride, as they are things which are beyond their control. In such situations, the anonymization of the people whose data were used in the research is very important, as it conceals private information. However, the situation in field linguistics is completely different. A language consultant is not a soulless source of data, because (s)he is a person who is an essential participant in the research process. (S)he takes part in a hard working process, and the result depends to a large extent on his/her intellect and efforts. In the case of highly endangered languages, it is often the case that the native speaker has preserved knowledge of his/her language in spite of many obstacles. Many people are proud that they did not lose their language and can take part in research or a language preservation activity. Thus, a field linguist faces a complicated problem: on the one hand, (s)he should not disclose private information, on the other hand, (s)he should acknowledge the efforts of the native speaker. In the case of highly endangered languages, it is often very important to know who of several speakers was the source of particular linguistic data, since every speaker has his/her own individual features that are important for a researcher.

One of the most typical solutions of this problem is the following: in presentations and articles use some special indices instead of the native speakers' names. This avoids disclosing private information about the native speakers to people who are not directly involved in the project, but retains important information for the colleagues who have worked with the same speakers. In books or other materials that may be accessible to the language community, it is good to mention the full names of the language consultants (provided they do not have any objections to this). When giving information about the native speakers, the researcher is responsible that this information does not look negative, improper or pejorative.

7.3.10. Dissemination of field results in the language community

While the results of linguistic fieldwork may be fully appreciated by the academic community, the language community does not consist of professional linguists and in most cases these results are not clear to the native speakers. What can the researcher do about this?

(a) Apart from his/her purely academic papers, (s)he can publish something that might be interesting for the community, such as learner's dictionaries and textbooks, archive materials, school materials, etc.;

(b) (S)he can add a popular preface, photographs, acknowledgements, etc. to his/her academic papers and then present these publications to the language community.

(c) It is possible to make a native speaker a co-author of a publication;

(d) Publications can be dedicated to the native speakers.

When preparing our grammar of the Votic language, we (Elena Markus and I) realized that an academic grammar is not easily understood by people beyond the professional society. To find an acceptable compromise we made several decisions: (a) we published the grammar in Russian; (b) we wrote a preface that would be interesting not only to linguists; (c) we started the grammar with a collection of spontaneous speech samples; (d) the speech samples were presented in two formats: in addition to the linguistic four-line format with morphological glossing, we also published speech samples and their Russian translations as single blocks of text to make them easy to read; (e) we included photographs of the native speakers in the grammar. These decisions had a positive impact, and some of the native speakers read (a part of) our grammar. After having read it, one of the last fluent Votic speakers said: "I will always work with you", and he really worked with us until his death, even lying in his bed.

7.4. Main actions that will help you to avoid ethical problems

This is a kind of summary for this chapter. It lists the most important principles that a field linguist should follow.

(a) Prepare official letters of support.

(b) Try to find a colleague who has previously worked in this or a similar language community who can explain the main rules of behaviour to you and give some useful advice.

(c) Try to establish good relations with the local authorities.

(d) Try to find a native speaker who can introduce you to the community.

(e) Study the culture and rules of the language community.

(f) Only make recordings with the consent of all parties.

(g) Explain what you are doing.

(h) Discuss your work with community members and authorities.

(i) Get the necessary permissions prior to publishing your work.

(j) Show preliminary results of your work.

(k) Work professionally.

(l) Explain linguistic questions to native speakers.

(m) Develop collaborative relationships with the community.

(n) Share your results with the community.

Chapter 8. Managing a field trip

- 8.1. Choosing a language
- 8.2. Preparation: linguistic issues
- 8.3. Preparation: organizational issues
- 8.4. Preparation: social issues
- 8.5. The first visit: linguistic tasks
- 8.6. The first visit: other tasks

This is the last chapter of the manual. It starts with a discussion about choosing a language for fieldwork. In many books on field linguistics, this question is usually discussed at the beginning of the book (see, for example, Chelliah & de Reuse 2011, Meakins, Green & Turpin 2018), but I think that it is more appropriate to choose a language when you already recognize all the challenges that fieldwork entails.

8.1. Choosing a language

The attitude of a researcher (as well as of all people) to a language is very subjective. It is unlikely that anyone will be able to give you general tips on how to find a language that you will never get bored with. However, there are a number of issues that should be kept in mind while making your choice. Most of these issues are not linguistic, but I will start with the linguistic ones.

The main linguistic question is why do you find this language interesting as an object of research. Of course, it is easy to answer this question if a language is totally undescribed: a description (at least partial) of an undescribed language is always an interesting, challenging and important task. Any information about such a language is valuable. However, in many language families there are no completely undescribed languages (or such a language is an exception) but most of the languages are insufficiently described. This concerns, in particular, the Uralic language family. By “insufficiently described” (or “underdescribed”) languages I mean one of the following typical situations:

- (a) There are only outdated grammar(s) that do not correspond to the contemporary standards of linguistic description. Often such grammars do not have a description of the syntax. The section on morphology gives only the basic facts, which are described according to a model taken from some other language with a different structure;
- (b) The description is made only for one variety (usually the most prestigious) while other varieties are totally undescribed or described very fragmentarily;
- (c) The existing materials have very many flaws, misinterpretations, incorrect transcriptions and translations, etc.;
- (d) The language has changed significantly since the time when the description was made;
- (e) Only a partial description was made (e.g. a dictionary was compiled but no synchronic grammars were created);
- (f) Only the normative and/or historical grammars were published but there is no synchronic grammar;
- (g) Speech samples have been published but without translation and/or morphological analysis (glossing).

One can say that a language is not undescribed when the following materials are available for this language:

- (a) a comprehensive grammar based on contemporary standards;
- (b) a dictionary containing accurate translations and the necessary morphological information (i.e. paradigmatic classes);

(c) a representative text corpus with morphological annotations (glossing).

Taking this approach, we can easily see that most languages are underdescribed (e.g. this is the situation in the Uralic family). This means that there is always lots of work for a field linguist.

Working with a language which is partially described has both positive and negative sides. The positive side is obvious: you are not a pioneer and you can use the materials collected by your predecessors. The negative side is that every time your opinion differs from the views of these predecessors, you need to come up with a very strong argument supporting your approach. This is a concern for the transcription, the interpretation of data, and many other things.

Besides the purely linguistic issues there is a list of important questions which the researcher should answer when choosing a language. They are:

(a) How am I going to communicate with the native speakers? See Section 2.1.1 on the problem of the intermediary language.

(b) Is it safe to go to the community? What precautionary measures have to be taken?

For many years, the Department of Applied and Theoretical Linguistics of Lomonosov Moscow State University organized linguistic expeditions to Dagestan. It was typical for the participants of the expedition to live in a local school, i.e. as “strangers” from the point of view of the community. After two unpleasant incidents at the end of the 1990s, it became clear that the existing format was no longer appropriate. Later expeditions were organized in a different way: people came in smaller groups and lived with a local, meaning that they were considered as “guests”, and it guaranteed their safety.

(c) Can I get all the necessary documents (visa, permission to work in the community)?

There are legal issues that can be obstacles for fieldwork. In some countries, work with language communities requires a special permit. In other countries, it may be problematic to reach the language community. For example, Western researchers who work in Russia require a specific kind of visa. Additionally, a significant part of Russia is a “border zone” and access to such places is limited (always for foreigners, but also often for Russians). The process of getting an access permit can vary depending on the particular region. I know of cases where the answer to the request for permission was received after many months of waiting and sometimes this answer was negative. An additional problem is that rules can change very quickly and if you had a positive experience last year, it does not mean that this year everything will be the same.

I also faced such problems when I did fieldwork in Votic and Ingrian villages. These villages are situated near the sea which is enough to declare this region a “border zone”. For several years, it was possible to simply visit a border patrol station and get a permit (which nobody ever checked). Later I had to send the list of participants of the expedition in advance to get the permits, and the border guards would randomly check the permits on the road. Later the permits became unnecessary for Russian citizens, but all foreigners had to apply for permits from the Federal Security Service in the main city of the district, and after that get another permit from the border patrol.

It is not enough to know about a border zone in the settlement where you are going. You may have to pass through a border zone on your way to the settlement.

In 2010, the Department of Theoretical and Applied Linguistics of Lomonosov Moscow State University organized an expedition to a Khanty village of Tegi. Getting to this village involved two stages – a train to Salekhard and then 300 km on a ferry up the Ob River. We faced no problems on our way to the village, but on the way back there was a passport control in the harbour. One of the students had a Belarussian passport and Salekhard belongs to a border zone (though this city is located hundreds of kilometres inside the territory of Russia). The presence of this student on this territory was considered illegal by the border patrol. Fortunately, associate professor Svetlana Yu. Toldova, who was the deputy head of the expedition, had all the necessary papers concerning the students' practical work as part of their university training, and managed to explain to the border patrol that students from the “friendly” countries coming for practical work had the right to enter this border zone.

(d) What about the climate?

Many people are sensitive to climate and weather. In continental climates, there is a big difference between the highest and the lowest temperatures. It can be -40°C (-40°F) in winter and $+40^{\circ}\text{C}$ ($+104^{\circ}\text{F}$) in summer. The weather conditions can affect the accessibility of settlements. For example, in Russia there are villages that are accessible by river in summer or by a “winter road” in winter but in spring and autumn they are cut off.

(e) Are there any health risks and how they can be avoided?

The main health problems concern tropical countries where there are many specific diseases which are not known well enough to the majority of Western physicians. In this case, it is necessary to consult with specialists working in these areas. Though many language families (e.g. the Uralic family) are not located in the tropical zone and the health risks for a Western researcher are lower there, it is worth consulting a specialist about potential health risks. One of the most typical health risks in Europe and Siberia is encephalitis. This disease, spread by ticks, is rather dangerous, especially in places where there is a lack of medical care. It is possible to vaccinate against encephalitis but it takes time (usually you need three doses with significant intervals between them) so it is better to think about vaccination in advance.

(f) Could my trip cause conflicts with my colleagues and how can I avoid that?

Unfortunately, there are researchers who are very jealous about “their” languages. Often this feeling comes from lack of professionalism that brings with it a fear that someone else might become a better specialist in this language. However, there can also be other reasons. In most cases it is possible to establish good relations with a colleague who is already working with this language. It is better to do so before the field trip. If you do not succeed and the problem remains, the choice you face is not a simple one. On the one hand, someone's bad attitude is not a good enough reason to cancel a planned field trip, but on the other hand, particularly for a young scholar, being involved in a conflict with a colleague can be rather stressful, and in some situations it may be better to start working on a neighbouring language or dialect and later switch to the variety that you originally thought about.

(g) Can I get financing for my field trip?

The expenses that a field trip involves depend on many factors. The most significant is usually the location. Some places are easily accessible by train or by bus for a relatively small sum. It is impossible to reach some other places without a helicopter and so the costs for transportation may be huge. I recommend making approximate financial calculations in advance. Do not forget to include costs for equipment, transportation, food, accommodation, and payment to the language consultants. Depending on the sum you can estimate how realistic it is to get a grant or financing from your university. It is worth remembering that costs during a first trip are usually higher as often you do not know the cheapest solutions.

When you have positive answers to all the listed questions, you can start preparing your field trip. The preparation includes three groups of issues: linguistic (i.e. related to the language and the research process), organizational (i.e. how to organize the workflow), and social (how to organize communication with the language community).

8.2. Preparation: linguistic issues

What is the first topic of research in the field? Some researchers have a topic, which they have already studied in other languages, and they have now decided to get material from one more language. My opinion is that this approach is good if this topic serves as a guide that allows one to make inroads into this language. However, many people limit their fieldwork to this particular topic, and it often gives questionable results: the collected data do not have accurate transcriptions or a reliable interpretation. Sometimes you hear researchers say things like: “I study syntax so phonetics is not important for me”. From my point of view, this approach is awful as it leads to distorted data that might later be cited by other researchers (assuming they do not consult a specialist in this language to check the transcription and interpretation).

If you do not have a specific topic to study, you can formulate a simple questionnaire that will help you to study the basics of this language. These basics include:

- a short vocabulary;
- a preliminary transcription;
- defining the main grammatical categories and their markers.

For the correct interpretation of the language data it is always important to collect basic sociolinguistic information about the native speakers.

When I was preparing the first expedition to the Ingrian community in 2006, I formulated two questionnaires. One questionnaire contained 150 sentences for translation of basic grammatical structures. Recording this questionnaire took 1–3 hours depending on the particular native speaker and the particular researcher. It would be collected during one or two (or occasionally three) fieldwork sessions. The questionnaire started with syntactically simple sentences and ended with more complex ones. Usually the questionnaire was recorded from the first to the last sentence, as it helped to get the native speaker used to the elicitation technique. For some speakers, who had stopped using the language some time ago, it would take several sessions before their command of the language was ‘restored’, but with the best speakers, where this was not the case, we asked the questionnaire in the reverse order to avoid the initial sentences coming across as too boring for them. The second questionnaire was sociolinguistic and contained 60 questions on the linguistic biography of the native speakers. Unlike the first one, this questionnaire was recorded in the genre of free talk in Russian (i.e. not question by question) and was used to establish positive relations with the native speaker and to give him/her pauses in the process of recording of the first (grammar) questionnaire. The combination of these two questionnaires made the first contacts with the native speakers positive and productive. The participants of the expedition quickly learned the basic vocabulary and pronunciation, and the native speakers were impressed when the students already knew some words and were able to suggest an alternative if a native speaker forgot a word. The comparative data recorded with every speaker later became indispensable material on idiolectal variation. At the same time, we collected information about the sociolinguistic background of every speaker and checked their language competence and ability to work as language consultants.

In order for a field trip to be productive, it is important to know at least some basic facts about the language. If the language is totally undescribed, it is worth having a look at related languages. However, there are usually at least some materials on the language: grammars, dictionaries, missionary notes, etc. The researcher should get acquainted with them in advance, and take copies to the field. After this, the researcher can define the tasks of the field trip and prepare the necessary questionnaires.

You should never be afraid that you will have nothing to do in the field. If all the prepared questionnaires are collected, you can always record some narratives and then transcribe and translate them with the help of the native speakers, as such material is always highly valuable.

Of course, it is worth consulting any specialists on this or related languages about the topics and/or methodology that you have chosen.

8.3. Preparation: organizational issues

(a) Equipment

If you do not have the appropriate equipment you should buy it. See Sections 3.2 and 4.2 on choosing audio and video equipment. It is important to take into account such things as climate (equipment can be sensitive to hot weather and humidity) and access to a power supply (there are many places where the AC power supply is not stable, e.g. it is only available for a couple of hours per day).

It is very important to test your equipment. If the equipment is new (or borrowed from some other person), you need to do a detailed testing. If it is equipment that you have already used, a basic testing would be enough (just make a recording and listen to it, or watch it in the case of video).

It is always good to have a spare set of equipment.

(b) Participants

A very important question concerns the participants of the field trip. Many researchers prefer to travel alone, because:

- it is easier to integrate into the language community;
- you are more mobile;
- the expedition costs are lower;
- problems communicating with other participants do not arise;
- the question of the authorship of data does not arise.

Nevertheless, collective field trips also have their positive sides:

- they allow much more data to be collected;
- it is possible to discuss data and linguistic issues during the field trip, and there will be less flaws and misinterpretations;
- it is possible to share duties (this concerns not only linguistic but also household matters, especially if you have to do such things as cutting wood, bringing water from a distant spring, stoking a fire, preparing food, etc.);
- it is safer for you, especially if some unexpected problems (for instance, health-related) arise;
- it is safer for the data (of course, if all participants have copies, see Section 5.1).

A small group of 2–3 persons is able to combine the positive aspects of both individual and collective field trips. For example, it might be possible to stay with one of the native speakers (which is usually impossible if there are 5 or more participants in the group), and the mobility remains relatively high.

If you work in a team, it is worth thinking in advance about how you will share the work, organize the visits to the language consultants, exchange the collected data, etc.

(c) Life in the field

Three main problems of life in the field are: accommodation, transportation and nutrition. Each one of these problems has many potential solutions. The choice depends on the circumstances in the field and individual preferences.

Researcher I. organized an expedition to a minor Finnic language. During the expedition, the participants lived in a tent. They were unlucky, because that summer was very rainy so everything got wet and life in the tent was not very comfortable. When the expedition was approaching the end, one of the native speakers asked a member of the team: “Why did not you stay at my place?” The researcher was very surprised to hear that this option existed. He asked the head of the expedition: “Why did not we stay at the house?” The answer was: “I did not like the smell there”.

The most typical accommodation options are:

- at a native speaker’s home;
- to rent a house or apartment that is not occupied;
- at the local school or kindergarten;
- in the local guesthouse.

Transportation includes transportation to the field and transportation in the field. Usually there are not many options, and the choice depends on the particular situation.

The issue of nutrition has several solutions:

- to cook your own food;
- to eat food cooked by the local people (if you stay at somebody’s place);
- to eat in a local canteen;
- to have an agreement with a local organization (e.g. a school) that they cook food for you.

Much depends on whether there is a shop in the settlement.

It is worth finding out in advance what kind of proof is needed for expenses which you incur and want to reclaim from your department, and to establish whether it will be possible to get this proof. For example, not every taxi driver can give you a receipt that confirms your payment.

(d) Potential medical problems

Check if vaccinations are needed for the territory where you are going (see Section 8.1) and get vaccinated in advance.

Buy all the medicines that you usually use and think about what you may potentially need. The nearest pharmacy may be dozens or even hundreds of kilometres from your location. Again, it is worth consulting with colleagues about the typical diseases found in the area you are travelling to and the corresponding precautions.

(e) Other issues

Here is a short list of things that people often forget to take:

- batteries (you should take enough even for the situation where AC power supply is lacking);
- adapters (e.g. in Russia, there are two main types of electric plugs: the old-style socket, which you often find in villages, has 4.5 mm holes that are too narrow for European plugs. It is not difficult to find a suitable adapter in the city but in the village it may pose a problem);
- paper;
- medicines (I also strongly recommend checking if these medicines are allowed in the country you are going to: every country has its own standards and a medicine which you can

buy without a prescription in your country may be a reason for the initiation of criminal proceedings in another country);

- a spoon, mug, and other basic dishware;
- a raincoat (if it is not the winter season, I strongly recommend buying a waterproof raincoat, which can be compactly packed);
- insect repellent / mosquito net (in many northern areas, you cannot keep your mouth open for more than ten seconds without catching a mosquito or some other biting insect. A mosquito net that you can put on your head may be very useful in some areas, see Figure 8.1);



Figure 8.1. A mosquito net

- a pocket flashlight;
- toilet paper (in some countries, there is no toilet paper in public toilets);
- an extra pair of shoes (shoes can be easily torn or get wet, and the nearest shoe shop may be hundreds of kilometres from you. In some regions, a pair of rubber boots is the main footwear).

Some of these things may be crucial.

8.4. Preparation: social issues

(a) Payment

This issue was discussed in detail in Section 7.3.1. Make a decision concerning payments to language consultants. If you are going to pay them, think about the corresponding documents. If you have financing from some institution, discuss what confirmation of payment they will require. A typical problem is that the institution may be able to pay money into a bank account but the native speakers live in a country with a different banking system or they do not have an appropriate bank account.

When I was working on the Ingrian documentation project, I had this problem because the financing came through the University of Tartu, but the native speakers of Ingrian lived in Russia, and it was not easy just to transfer money into their accounts. The following solution was taken: I prepared an agreement (in both Estonian and Russian) defining the work accomplished by the native speaker and the corresponding payment, and receipts to prove that the native speaker had received money from me in cash. The native speaker signed all these papers, which I was able to submit to my university, and my expenses were reimbursed. During the next visit to the same native speakers, I took them a copy of the agreement signed by the university.

If you are paying in cash, ensure in advance that you are not taking banknotes which are too high in value: it can be difficult to change them to smaller banknotes in the village.

Again, I recommend consulting with colleagues who are experienced in fieldwork with this community about the appropriate rates and methods of payment.

(b) Official letter from your university

Prepare an official letter from your university that explains the goals of your activities. Try to make it maximally concrete and comprehensive for people outside the academic community. Of course, this letter should be written in a language understandable by local people.

(c) Gifts for community members

During the first visit when you do not know about the needs of the language community or particular native speakers, symbolic gifts, such as a pen or a mug with the logo of your university or something similar, can be very useful. A standard gift is a nice-looking box of chocolates but you should make sure that the native speaker does not have diabetes or some other health issues that prevent him/her from eating sweets. Coffee, and to a lesser extent tea, also make good gifts. When you know the needs of the native speakers better, you can bring them various things: particular food, kitchenware, clothes, etc.

(d) Support from the language community

It is very good to establish a good relationship with some respected member of the language community. If it was not possible to do this in advance, it might be the first task in the field. There are communities that are rather suspicious towards strangers, but when you are introduced by a respected community member the situation may change completely.

(e) Making use of available knowledge about the community

It is always worth consulting with researchers who have already worked with this language. They may be able to give you some important information about the community, and you will be able to convey their greetings to the native speakers so you will not look like a stranger.

8.5. The first visit: linguistic tasks

The main tasks during the first visit to a language community are:

(a) To understand the ability of every native speaker to work as a language consultant and to compile a list of potential language consultants. This ability depends mostly on two factors: language competence and a will to work with the researcher. When defining the language competence of the native speaker, you should not trust the evaluations of other native speakers. This is especially important in communities where the target language is not the language of everyday communication. It often happens that a communicative person who knows only several proverbs and poems is thought of as a good speaker, while a really fluent speaker is not mentioned because nobody tries to speak with him/her in the target language. The tests for language competence should be different: for example, some people may be good interpreters but very bad story tellers, and for some others the opposite may be true. The researcher should ascertain what data collection method fits best with each language consultant and select consultants for the most intensive work.

(b) To establish good relations with native speakers and to explain to them the goals of your research.

(c) To find out the sociolinguistic background of all language consultants.

(e) To collect linguistic data necessary for future work, including:

- basic data on phonetics. The researcher should try to establish the main phonological oppositions in the language and formulate a preliminary system of transcription.

- basic vocabulary. It is highly useful to collect a short vocabulary (~ 100–500 words) and to remember these words. This will help a lot during visits to new informants: when a researcher knows at least some words in the language, it always creates a good impression (see Section 2.2.7).

- basics of grammar. Usually it does not take much time to define the main grammatical categories. After that the researcher will be able to construct and to understand simple sentences in the language.

(d) To have a preliminary picture of dialectal variation and of individual characteristics of the speakers.

What are the most important things to do during the first visit(s)?

- to show to the native speaker that you are really interested in the language;
- to demonstrate that you are able and willing to study the language;
- to show that the work with the researcher can be interesting (in order to do this, the researcher should avoid overburdening the native speaker with boring and hard work);
- to create the feeling that the native speaker's help is valuable and (s)he knows the language well enough for your research;
- to explain the main goals of your work.

8.6. The first visit: other tasks

Besides linguistics there are some other tasks for the first visit in the field.

It is worth establishing good relations with the local administration. I recommend making a visit to them, showing them your papers and explaining the goals of your activities.

I also recommend getting acquainted with the respectable members of the community even if you are not going to work with them as language consultants.

Pay attention to the relatives of your language consultants.

During the first visit, the researcher should find solutions to the main organisational problems, focusing in particular on:

(a) Place of work

The working sessions can be organized at the native speaker's home, or at the researcher's lodgings, or in a specially prepared place. Sometimes there is no choice (for example, the native speaker may be an elderly person and it may be difficult for him/her to go outside the house. In other cases, the researcher has options. It is often easier to set up good conditions for recording in a single place than have to replicate them in the house of each language consultant.

(b) Schedule of work

Usually there is a choice between scheduled appointments and "free hunting". Of course, a more systematic and, correspondingly, successful work schedule is expected when the researcher is able to make appointments with native speakers. However, it is not always possible. For example, if the researcher is in the field during the season of agricultural works, much depends on the weather. For instance, the native speaker might be able to work with the researcher when it is raining but may be busy in his/her garden at other times.

During the first visit to the field it is typical for one to work in a somewhat ad hoc manner, arranging impromptu elicitation sessions with whoever is available and willing to work at any given time, but I recommend moving towards scheduled work as soon as possible.

(c) Team work

If you go to the field with a group of colleagues, you need to make several decisions. How many people can go to one native speaker simultaneously? I suppose that during the first fieldwork session two or three visitors are the optimal option, especially if there are unexperienced researchers among them. It helps all team members become acquainted with all language consultants. Additionally, parallel recordings can compensate for mistakes which are rather typical during the first working sessions. Usually it is not long before all researchers are able to work productively on their own, though this does not mean visits of two researchers simultaneously need to be excluded.

One of the advantages of team work is the possibility to exchange information. A useful way to do this is through seminars where a member of the team tells the others about his/her findings or questions, and all other team members take part in the discussion.

Storing of the data collected by a team of researchers is also a question to be solved. Section 6.5 gives an example of a possible solution.

8.7. Concluding words

Every field trip is unique and no recommendations or advice can cover all the possible eventualities that may happen on a particular trip. However, I hope that this brief manual will help researchers to avoid at least the most typical mistakes and make their work in the field more productive, successful and comfortable.

References

- Bochnak, M. Ryan & Matthewson, Lisa. 2015. *Methodologies in Semantic Fieldwork*. Oxford: Oxford University Press.
- Bouquiaux, Luc & Thomas, Jacqueline M. C. (eds.). 1971. *Enquête et description des langues à tradition orale*. Paris: SELAF.
- Bouquiaux, Luc & Thomas, Jacqueline M. C. 1992. *Studying and Describing Unwritten Languages*. Dallas: SIL.
- Bowern, Claire. 2008. *Linguistic fieldwork. A practical guide*. New York: Palgrave Macmillan, 2008.
- Burling, Robbins. 1984. *Learning a Field Language*. Ann Arbor: University of Michigan.
- Chelliah, Shobhana L. & de Reuse, Willem J. 2011. *Handbook of Descriptive Linguistic Fieldwork*. Dordrecht – Heidelberg – London – New York: Springer.
- Comrie, Bernard & Smith, Norval. 1977. Lingua descriptive studies: questionnaire. *Lingua* 42, 65–71.
- Gippert, Jost, Himmelmann, Nikolaus P. & Mosel, Ulrike (eds.). 2006. *Essentials of Language Documentation*. Berlin: Mouton de Gruyter.
- Grenoble, Lenore A. & Furbee, N. Louanna (eds.). 2010. *Language Documentation. Practice and values*. Amsterdam – Philadelphia: John Benjamins.
- Hale, Ken; Krauss, Michael; Watahomigie, Lucille J.; Yamamoto, Akira Y.; Craig, Colette; Jeanne, LaVerne Masayesva & England, Nora C. 1992. Endangered languages. *Language* 68, 1–42.
- Himmelmann, Nikolaus. 1998. Documentary and descriptive linguistics. *Linguistics* 36 (1), 161–195.
- Kibrik, Aleksandr E. 1972. *Metodika polevyx issledovanij*. Moskva: Izdatel'stvo Moskovskogo universiteta.
- Kibrik, Aleksandr E. 1977. *The Methodology of Field Investigations in Linguistics (Setting up the Problem)*. The Hague – Paris: Mouton.
- Krauss, Robert M. & Weinheimer, Sidney. 1966. Concurrent feedback, confirmation and the encoding of referents in verbal communication. *Journal of Personality and Social Psychology* 4, 343–346.
- Kung, Susan Smythe; Sullivant, Ryan; Pojman, Elena & Niwagaba, Alicia. 2021. *Archiving for the Future: Simple Steps for Archiving Language Documentation Collections*. Online course available at <https://archivingforthefuture.teachable.com/>. Accessed on 14 November 2021.
- Ladefoged, Peter. 2003. *Phonetic Data Analysis. An Introduction to Fieldwork and Instrumental Techniques*. Malden, MA: Blackwell Publishing.
- Lehmann, Christian. 1999. Documentation of endangered languages: A priority task for linguistics. *Arbeitspapiere des Seminars für Sprachwissenschaft der Universität Erfurt*. Number 1. Erfurt: Universität Erfurt.
- McGurk, Harry & MacDonald, John. 1976. Hearing lips and seeing voices. *Nature* 264 (5588), 746–748.
- McNeill, David. 1992. *Hand and Mind: What Gestures Reveal about Thought*. Chicago – London: University of Chicago Press.
- McNeill, David (ed.). 2000. *Language and Gesture*. Cambridge: Cambridge University Press.

- Markus, Elena & Rozhanskiy, Fedor. 2013. Folklore Texts as a Source of Linguistic Data: Evidence from Votic Folklore. *Finnisch-Ugrische Mitteilungen* 36, 75–91.
- Matthewson, Lisa. 2004. On the methodology of semantic fieldwork. *International Journal of American Linguistics* 70 (4), 369–415.
- Meakins, Felicity; Green, Jennifer & Turpin, Myfany. 2018. *Understanding Linguistic Fieldwork*. London – New York: Routledge.
- Mithun, Marianne. 2001. Who shapes the record: the speaker and the linguist. In P. Newman, M. Ratliff (eds.). *Linguistic Fieldwork*. Cambridge: Cambridge University Press, 34–54.
- Nathan, David & Austin, Peter K. 2004. Reconceiving metadata: Language documentation through thick and thin. In Peter K. Austin (ed.). *Language documentation and description, vol. 2*. London: SOAS, 179–187.
- Nenola, Aili. 2002. *Inkerin itkuvirret*. Helsinki: Suomalaisen kirjallisuuden seura.
- Pierrehumbert, Janet B. 1980. *The phonology and phonetics of English intonation* (Doctoral dissertation, Massachusetts Institute of Technology).
- Samarin, William J. 1967. *Field Linguistics: A Guide to Linguistic Field Work*. New York – Chicago – San Francisco – Toronto – London: Holt, Rinehart and Winston.
- Seifart, Frank; Evans, Nicholas; Hammarström, Harald & Levinson, Stephen C. 2018. Language documentation twenty-five years on. *Language* 94, e324–e345.
- Seyfeddinipur, Mandana. 2012. Reasons for documenting gestures and suggestions for how to go about it. In Nicholas Thieberger (ed.). *The Oxford Handbook of Linguistic Fieldwork*. New York: Oxford University Press, 147–165.
- Seyfeddinipur, Mandana & Gullberg, Marianne (eds.). 2014. *From Gesture in Conversation to Visible Action as Utterance. Essays in honor of Adam Kendon*. Amsterdam – Philadelphia: John Benjamins.
- Seyfeddinipur, Mandana; Ameka, Felix; Bolton, Lissant; Blumtritt, Jonathan; Carpenter, Brian; Cruz, Hilaria; Drude, Sebastian; Epps, Patience L.; Ferreira, Vera; Galucio, Ana Vilacy; Hellwig, Brigit; Hinte, Oliver; Holton, Gary; Jung, Dagmar; Kasinskaite-Buddeberg, Irmgarda; Krifka, Manfred; Kung, Susan; Monroig, Miyuki; Neba, Ayu'nwi Ngwabe; Nordhoff, Sebastian; Pakendorf, Brigitte; von Prince, Kilu; Rau, Felix; Rice, Keren; Riessler, Michael; Szoelloesi-Brenig, Vera; Thieberger, Nick; Trilsbeek, Paul; van der Voort, Hein & Woodbury, Tony. 2019. Public access to research data in language documentation: Challenges and possible strategies. *Language Documentation & Conservation* 13, 545–563.
- Seyfeddinipur, Mandana & Rau, Felix. 2020. Keeping it real: Video data in language documentation and language archiving. *Language Documentation & Conservation* 14, 503–519.
- Skopeteas, Stavros; Fiedler, Ines; Hellmuth, Sam; Schwarz, Anne; Stoel, Ruben; Fanselow, Gisbert; Féry, Caroline & Krifka, Manfred. 2006. *Questionnaire on information structure: Reference Manual*. Potsdam: Universitätsverlag Potsdam.
- Vydrine, Valentin. 1999. *Manding-English Dictionary (Maninka, Bamana), vol. 1*. St. Petersburg: Dmitry Bulanin Publishing House.
- Zamjatin, Konstantin; Pasanen, Annika & Saarikivi, Janne. 2012. *Kak i začem soxranjajt jazyki narodov Rossii?* Helsinki.